

Gender Lens to the Future of Work

Anita I. Jivani

Acquiring new skills will be foundational to surviving in and leading in the workplace of the future. Organizations must make concerted efforts in upskilling women to maintain high levels of productivity and growth. This acquisition of new skills will help women make the transition into new jobs that will be necessary due to automation and today's workplace realities. Without it, the workplace could become even more unbalanced than it is today. Further, today's gaps need to be filled in a holistic manner to ensure that not only are tomorrow's technologies created by a diverse group of people, but also that they are implemented in a human-centered manner that aligns with the original intention. The private sector has a vital role to play in preparing the workforce that it will need and should prototype holistic solutions to help respond to this critical need.

Revolutionary shifts in technology and ways of working over the past decade are changing how we achieve business and societal goals. Although these shifts are generally assessed in terms of how they will impact productivity and profits, it is critical that we assess how these technologies affect and are affected by humans, and how they have a unique bearing on women in the workplace.

Despite narratives in the media that highlight women's ongoing progress toward greater equality, the reality is disappointing. Variables such as leave policies, equality in leadership in the public and private sectors, and behavioral shifts in mindset tell us another story: there has been slim to no progress in actual results in the past ten years.

Women represent 44.7 percent of the total worker population, yet hold only 4.8 percent of CEO roles at S&P 500 companies and make up just 11 percent of top earners.¹ Although there have been positive changes over the last decade that have given more women more opportunities – including a concerted effort to diversify senior roles – the overall results from these changes continue to be less than acceptable, and necessitate a broader conversation about why so little progress has been made over such a long period of time, all while creating the false perception of significant progress.

Understanding the complex and fast-moving context in which we try to address the issue of gender equality is critical in attempting to dissect and influence

it. We need a new lens: one that marries today's and anticipates tomorrow's technological and workplace realities, such as increased automation and an ability to access work easily outside of the formal work campus, with lessons learned from decades of attempting to bring about a more balanced workforce. Experts estimate that these new shifts in technology and ways of working will require 40 to 160 million women to move into new positions and roles just to maintain the status quo gender balance. An inability to make this transition into new roles will leave women even further behind.²

Humans ultimately determine how new innovations are used and how effective they are; these same humans should proactively manage their intended and unintended consequences. The complexity of managing new technological innovations is commensurate with their power and influence.

New applications like Microsoft's PowerBI allow us to track and visualize data with ease, moving from previously opaque Excel sheets with thousands of lines of data to beautiful, user-friendly, and digestible visuals that everyone can understand. Technology has democratized and magnified communications by allowing anyone to vocalize their opinion in a public forum without much vetting required. Twitter and Facebook both opened to the public in 2006, but the ubiquitous use of them – Facebook has over 2.27 billion users globally despite being blocked in North Korea and China – was unanticipated and exponential beyond expectations.³ This power of informal influence that individuals have predominately used in nonwork settings through social networks is now even infiltrating the workplace through citizen development. Many new tools are crafted in user-friendly formats aimed at those with less digital dexterity to allow anyone, not just those in the technology department or the executive suite, to create a custom application that they think would add value to their ecosystem.

Technological tools have also brought objectivity to often subjective processes like hiring. Such innovations include augmented writing services that support organizations in becoming aware of how gendered their job postings are, helping them to eliminate skewed language and eventually bring a more balanced set of applicants into the talent pool. Companies leverage new platforms like Textio, which offers tools such as the “tone meter” to rate the language used in job descriptions on a scale from highly masculine to highly feminine, to improve their hiring practices.⁴ Another company, HireVue, uses artificial intelligence and video interviews to focus on skills that correlate to the needs of the job, helping to ensure consistency and objectivity in hiring while also improving efficiency.⁵

These start-ups have not only been well received in the tech community, but have also been growing fast at large businesses. Unilever leverages HireVue technology to decrease hiring time from months to weeks while attempting to control for bias and make better hiring decisions.⁶ Mya, an AI-based hiring tool fo-

cused on conversing with candidates over text and in multiple languages, was used at forty Fortune 500 companies within the first two years of the tech start-up's existence.⁷

Information like salary data has also become more transparent and available for the public to view, partially because of the country-specific regulations to disclose gender pay difference and partially because of the online availability of previously private data that has increased access to the general public. The overall push to transparency is nudging organizations to turn the spotlight internally, an exercise they may not have done previously, while also holding them accountable publicly to the gaps that exist.⁸

Yet these technologies are only facilitators of a desired human behavior, and understanding how these tools are crafted, deployed, and used in the everyday lives of humans is the more critical and often overlooked question. And it is even more important and complicated when it comes to understanding the effects of these tools when attempting to foster a more equal workplace.

Social media and the Internet have combined to create a powerful channel to elevate the voices of thousands of women, but the secondary consequences are still unfolding. For example, the term “Me Too” was conceived in 2007 by Tarana Burke, focused on women sharing experiences of sexual harassment and building a community of empathy.⁹ It was only ten years later when Alyssa Milano, an actress with over three million Twitter followers, encouraged women to retweet the phrase if they had been affected by sexual harassment or assault that it really got traction.¹⁰ The post led to a wider outpouring of responses across social media outlets, including Facebook, where more than twelve million expressions of the hashtag flooded in within the first day.¹¹ The social media community took a phrase that was coined over a decade ago and created an online movement with vast real-world consequences across the entertainment industry, the media, government, the office and boardroom, and individual relationships.

But the implications of the #MeToo movement are yet to be fully grasped and are potentially more complicated than they may appear. For example, firms have attempted to respond to the movement by creating policies and dialogue about sexual harassment that may inadvertently alienate men and discourage them from taking on female mentees: both because of a lack of awareness of how to manage opposite gender junior staff in an appropriate manner and confusion around the opaque formal and informal policies that are often instituted as a public-relations response to a senior-level executive scandal. Such hurried and often external-facing responses can have an indirect impact on the rest of the women in the organization who face the implications of this sort of policy.

The McKinsey report *Women in the Workplace 2018* highlights the fact that women already have less formal time and engagement with senior leaders to discuss

work than men and many women share limited or no engagement at a casual level with these leaders.¹² Because senior leaders sit in a unique position of influence with an ability to create opportunities that did not otherwise exist, this lack of formal and informal access likely prevents women from receiving opportunities offered to their male counterparts. Fear of ambiguous policies, warranted or unwarranted, could lead to even less exposure for women to executives, the majority of whom are men.

The shift to a more contingent workforce, although traditionally seen as beneficial to women, could lead to a similar challenge. Technology has made it unnecessary for people to be physically in the office, allowing employees to do their jobs equally well on the beach as in the cubicle. Organizations have embraced this shift for logical reasons: real-estate costs per head go down significantly with a shared workspace, the increasingly global environment may make “odd hours” preferable, and the adoption of these new work models will enable companies to attract the next generation of talent. The shift away from traditional workers will allow more flexibility, something that women with children increasingly crave, but will also increase the amount of risk not only for women, but also those that depend on them such as their children and aging parents.

The flexibility of the new work environment comes with trade-offs, such as unpredictable pay for those engaging in the gig economy; erratic schedules; lack of benefits including employer-sponsored health care, parental leave, or sick time; and ambiguity around the informal norms and perceptions of your role and ability to progress in the organization. How these impact women’s ability both to stay and grow in organizations will depend on how they are positioned in the larger working ecosystem.

The types and number of in-demand roles that will emerge over the next ten years will look different than today’s. According to *Women in the Workplace*, there will be a need for a different mix of skills within the workforce, primarily an increase in technical and social skills and a potential decrease in manual-labor skills due to automation.¹³ These skill growth areas could manifest themselves in technology-driven roles such as software developers; roles that draw from skills that are uniquely human, such as sales and customer service; and roles that are completely focused on new technologies that are yet to be well understood and integrated, such as robotics engineers and positions with subject matter experts working with big data.¹⁴ Each of these categories will affect women differently based on their current progress or lack thereof in these fields.

Technical roles will expand, with everyone needing to increase their tech fluency to be relevant in the new workforce, which will offer a unique opportunity for those who have these skills already and are able to use them in new and ambiguous contexts.¹⁵ Nevertheless, the academic basis of these skills, predominate-

ly engineering and computer science, has significantly fewer women engaging at the bachelor's, master's, and doctoral levels.¹⁶ For both engineering and computer science, at the bachelor's level, women account for only about 18 percent of the degrees earned; at the master's and Ph.D. levels, women earn anywhere between 22.5 percent and 30.4 percent of degrees. Not surprisingly, this influences the number of women who hold STEM jobs. In 2016, just 25 percent of computer and mathematical jobs and 14 percent of architecture and engineering jobs were held by women.¹⁷

The lack of women in engineering and computer science fields is concerning because these competencies are becoming some of the most valued at the leadership levels. In fact, research has shown that this technical background links to women's ability to get on corporate boards, with women on boards twice as likely to have a technology-related background than their male counterparts.¹⁸ A study completed by Accenture with five thousand workers in thirty-one countries found that countries with higher tech fluency also have stronger gender equality.¹⁹ The trickle-down effect of increasing the technical skill set of a workforce is an even stronger reason to invest early and often in developing capabilities.

Regardless of whether employers acquire in-demand skills by training their existing workforce or by hiring emerging experts in those fields, upskilling – training employees in new skills like coding to meet the demands of a transforming economy – will be a foundational aspect of people who will be successful in the future. With shifts in technology moving faster than humanity's ability to adapt to them, the ability to learn quickly will be a major advantage to applicants and workers competing for a promotion.²⁰ The World Economic Forum predicts that 54 percent of the workforce will need significant upskilling, with 42 percent of the core skills needed in the workforce expected to shift between 2018 and 2022.²¹ The challenges of acquiring a new set of skills exist regardless of gender; however, women may be at a disadvantage in their ability to respond effectively.

If employers expect that training will occur off-hours and through workers' own financial investment, many employees will not engage due to their external work obligations, like child-rearing and caring for aging parents, societal responsibilities still overwhelmingly met by women. This will lead to a poorly skilled segment of the workforce, already at a disadvantage, that will be left behind. We already see some of this manifested today as women self-report learning new digital skills at a lower rate than men, 45 percent versus 52 percent; changing skills requirements may only widen this gap.²²

Employers can begin to address these issues by investing strategically in training and leveraging technology in universally accessible ways. In 2017, over \$90 billion was spent in total U.S. training expenditures.²³ Meanwhile, over 33 percent of workers in the United States reported not engaging in any training in the last year, which begs the question of where all the enterprise-training investment is going.²⁴ Using more cost-effective and user-friendly training solutions such as

mobile video tutorials and online microlearning platforms, along with other innovative training models leveraging technology such as virtual reality could allow organizations to utilize technology to both decrease cost and increase overall engagement. Nevertheless, it will be critical, especially for women who continue to be paid less than their male counterparts and have less free time outside of work, that organizations open both their wallets and employees' time during the workday to incorporate active upskilling on-the-job.

In addition to staying relevant in the workforce, a critical reason to invest further in the digital upskilling of women is to ensure that bias is not being built into technologies that will be used across populations during production stages. There are many examples of biased data going into systems, old and new, reflecting the prejudices and blind spots of their creators and often reinforcing damaging societal norms.

In the 1950s, Kodak used its Shirley color reference card to calibrate for skin tones, featuring a White model (Shirley) as the ideal subject, since they assumed most consumers fell into this category.²⁵ Because the film was designed to flatter lighter complexions, it created exposure issues for subjects with darker skin, at times making dark features invisible and thereby reproducing White standards of beauty. It was not until decades later that the industry embraced non-White skin tones in the creation of photography; in 1995, Kodak released a multiracial Shirley card, showing a White, a Black, and an Asian woman.²⁶ This mistake was not corrected in the modern age, when in 2009 Hewlett-Packard's face recognition application was shown to identify people with light skin tones but not those with dark skin tones.²⁷ This triggered online outrage, but after the dust had settled, no one addressed or resolved the core issue: the lack of diversity in developers that resulted in unconscious bias and an inability to test tools appropriately.

Today, emerging technologies are developed so quickly that they are regularly released in beta formats, often with the hope that testing can be open-sourced; however, this poses a tremendous risk that the tools will be mirrors of their creators. Upskilling women (and other underrepresented groups) in the field of technology can help prevent such biases from being created in the system.

The actual quality of the ecosystem and the relationships fostered within that space are also critical for the appropriate retention of women. Harvey Mudd College's focus on retaining women in engineering and computer science and Disney's CODE: Rosie are prime examples of how to put these theories into practice.

To retain and grow its number of female computer science graduates, Harvey Mudd made three key changes that made the field more relevant for women.²⁸ First, they tailored their introductory computer science course to different levels of learners and placed its applicability in the larger context of the world, making the experience both positive and relevant for women who may not have had

previous experience. Second, they provided early research opportunities to students before they declared a major to show the real-life application of these tools and build confidence in women interested in majoring in the field. Last, women at Harvey Mudd attended the Grace Hopper Celebration of Women in Computing, an event that allowed them to see a new culture around the field that was not male-centric and to feel part of a community and network. These simple changes increased the percentage of women graduating from Harvey Mudd College's computing programs from 12 percent to 40 percent in five years, showing that remarkable progress can be made in a relatively short period of time.

The private sector can play a similar role, with Disney's CODE: Rosie being a prime example of how to transition women from nontechnical to technical roles in a curated and sustainable model. The program starts with basic technical training in computer science and coding followed by a twelve-month on-the-job training in two teams before participants transition into a full technical role after the fifteen months.²⁹ The ecosystem in which Disney implemented this program is as important as the program itself: they collaborated with external organizations such as the tech-training firm General Assembly, which has expertise in upskilling for adults, and provided systemic support to trainees, such as the security to return to their previous roles if desired.³⁰

The ability for organizations to customize experiences for women by providing real-life applications that build early confidence and exposing them to communities of like-minded people can be applied across university and organizational settings to overcome barriers. By providing women the skills to be part of the crafting process itself, we are instilling a systemic check in the process of developing new future-shaping technologies.

We have not made sufficient progress on the challenges of gender equality in the workplace, and accelerating shifts in technology and ways of working present greater risk of widening the gender gaps in employment, wages, and opportunities for advancement. Although addressing systemic and organizational issues is critical to tackling gender equality, it is individual workers who will face the harshest demands of a technologically changing workplace in the coming decades. What this change looks like is yet to be fully understood; nevertheless, its magnitude will require us to reframe how we interact with each other and the skills we will need to be successful. Investing strategically in teaching women the technical and nontechnical skills needed to be successful in this era and providing organizational reinforcement, such as mentors and apprenticeship opportunities, will give women greater opportunities at all levels, from entry-level coding to the boardroom.

The responsibility falls not only on the educational institutions that formally provide skills to our young people, but also on the organizations that will ben-

efit from a more skilled and attuned workforce. The first step may be difficult for many organizations to take, especially when the exact skills are unclear and the timeline of the return on this investment is difficult to measure. Across sectors, leaders who feel paralyzed by the speed of change could take a nudge from Silicon Valley, where prototyping rigorously and testing out ideas with limited information is the norm, to attempt to tackle the nebulous challenges that lie ahead.

ABOUT THE AUTHOR

Anita I. Jivani is the Head of Innovation at Avanade Northeast and Director of the NYC Innovation Center, where she is focused on advising organizations on the Future of Work, Innovation, and Organizational Strategy and Design. She has spent time dissecting how shifts in our ecosystem are impacting how we live and reframing the way we work. She has counseled organizations on how these megatrends impact their strategy and how investing intentionally can prepare leaders for the future. Her interest in innovation and cross-sector collaboration stems from her work as a Fulbright Scholar, in which she examined the role of business in improving sociopolitical relations between the United States and Mexico.

ENDNOTES

- ¹ “Pyramid: Women in S&P 500 Companies,” *Catalyst*, October 3, 2018, <https://www.catalyst.org/knowledge/women-sp-500-companies>.
- ² McKinsey Global Institute, *The Future of Women at Work: Transitions in the Age of Automation* (New York: McKinsey & Company, 2019), <https://www.mckinsey.com/featured-insights/gender-equality/the-future-of-women-at-work-transitions-in-the-age-of-automation>.
- ³ “Facebook Fast Facts,” CNN, November 29, 2018, <https://www.cnn.com/2014/02/11/world/facebook-fast-facts/index.html>.
- ⁴ Tim Halloran, “Watch Your (Gender) Tone,” Textio Word Nerd, July 18, 2017, <https://textio.ai/watch-your-gender-tone-2728016066ec>.
- ⁵ HireVue, “HireVue Video Interviewing Software,” <https://www.hirevue.com/products/video-interviewing>.
- ⁶ HireVue, “Unilever’s Recruitment Process,” <https://www.hirevue.com/resources/unilevers-recruiting-process>.
- ⁷ “Mya, Industry’s Leading Conversational AI Recruiter, Takes Market by Storm, adds 120 Enterprise Customers, Including 40 of Fortune 500, in Under Two Years,” *Business Wire*, August 28, 2018, <https://www.businesswire.com/news/home/20180828005301/en/Mya-Industry%E2%80%99s-Leading-Conversational-AI-Recruiter-Takes>.

- ⁸ Australian Government Workplace Gender Equality Agency, *International Gender Equality Reporting Schemes* (Canberra: Workplace Gender Equality Agency, 2019), https://www.wgea.gov.au/sites/default/files/documents/2019-04-4%20International%20reporting%20schemes_Final_for_web_o.pdf.
- ⁹ Sandra E. Garcia, “The Woman Who Created #MeToo Long before Hashtags,” *The New York Times*, October 20, 2017, <https://www.nytimes.com/2017/10/20/us/me-too-movement-tarana-burke.html>.
- ¹⁰ Alyssa Milano (@Alyssa_Milano), Twitter post, October 15, 2017, https://twitter.com/Alyssa_Milano/status/919659438700670976?s=20.
- ¹¹ CBS News, “More than 12M ‘Me Too’ Facebook Posts, Comments, Reactions in 24 Hours,” October 17, 2017, <http://www.cbsnews.com/news/metoo-more-than-12-million-facebook-posts-comments-reactions-24-hours/>.
- ¹² McKinsey & Company and LeanIn.org, *Women in the Workplace 2018* (New York: McKinsey & Company, 2018), <https://womenintheworkplace.com/2018>.
- ¹³ McKinsey Global Institute, *The Future of Women at Work*.
- ¹⁴ World Economic Forum, Center for the New Economy and Society, *The Future of Jobs Report 2018* (Geneva: World Economic Forum, 2018), http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf.
- ¹⁵ Anthony Stephan, Martin Kamen, and Catherine Bannister, “Tech Fluency: A Foundation of Future Careers,” *Deloitte Review*, July 2017, <https://www2.deloitte.com/us/en/insights/deloitte-review/issue-21/tech-fluency-mastering-the-language-of-technology.html>.
- ¹⁶ National Center for Education Statistics, Digest of Education Statistics, “Table 318.30: Bachelor’s, Master’s, and Doctor’s Degrees Conferred by Postsecondary Institutions, By Sex of Student and Discipline Division: 2014–15,” https://nces.ed.gov/programs/digest/d16/tables/dt16_318.30.asp.
- ¹⁷ Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, “Table 11: Employed Persons by Detailed Occupation, Sex, Race, and Hispanic or Latino Ethnicity,” Household Data Annual Averages 2016, <https://www.bls.gov/cps/cpsaat11.htm>.
- ¹⁸ Accenture, “Tech Experience: Women’s Stepping Stone to the Corporate Boardroom?” (Dublin: Accenture, 2016), https://www.accenture.com/_acnmedia/pdf-29/accenture-tech-experience-womens-stepping-stone-corporate-boardroom.pdf.
- ¹⁹ Ibid.
- ²⁰ Thomas L. Friedman, *Thank You for Being Late: An Optimist’s Guide to Thriving in the Age of Accelerations* (New York: Farrar, Straus and Giroux, 2016), 213–219.
- ²¹ World Economic Forum, Center for the New Economy and Society, *The Future of Jobs Report 2018*, 12–13.
- ²² Accenture, “Getting to Equal: How Digital Is Helping Close the Gender Gap at Work” (Dublin: Accenture, 2016), http://www.accenture.com/t20160303T014010Z__w_/us-en/_acnmedia/PDF-9/Accenture-IWD-2016-Research-Getting-To-Equal.pdf.
- ²³ David Wentworth, “Top Spending Trends for Training, 2016–2017,” *Training magazine*, November/December 2016, <http://trainingmag.com/top-spending-trends>

- training-2016-2017; and “2017 Training Industry Report,” *Training* magazine, November/December 2017, [https://pubs.royle.com/publication/?i=448382#{"issue_id":448382,"page":22}](https://pubs.royle.com/publication/?i=448382#{).
- ²⁴ “Employees Know They Need Upskilling, But Many Don’t Pursue It,” *Talent Daily*, a CEB blog, October 11, 2017, www.cebglobal.com/talentedaily/employees-know-they-need-upskilling-but-many-dont-pursue-it/.
- ²⁵ Mandalit del Barco, “How Kodak’s Shirley Cards Set Photography’s Skin-Tone Standard,” NPR, November 13, 2014, www.npr.org/2014/11/13/363517842/for-decades-kodak-s-shirley-cards-set-photography-s-skin-tone-standard.
- ²⁶ Sarah Lewis, “The Racial Bias Built into Photography,” *The New York Times*, April 25, 2019, <https://www.nytimes.com/2019/04/25/lens/sarah-lewis-racial-bias-photography.html>.
- ²⁷ Mallory Simon, “HP Looking into Claim Webcams Can’t See Black People,” CNN, December 23, 2009, <https://www.cnn.com/2009/TECH/12/22/hp.webcams/index.html>.
- ²⁸ Christianne Corbett and Catherine Hill, *Solving the Equation: The Variables for Women’s Success in Engineering and Computing* (Washington, D.C.: American Association of University Women, 2015).
- ²⁹ Harry McCracken, “How Disney Is Turning Women from across the Company into Coders,” *Fast Company*, June 4, 2018, <https://www.fastcompany.com/40576156/most-creative-people-2018-nikki-katz-disney>.
- ³⁰ *Ibid.*