Why Diverse Teams Matter

Two main cases can b e made for di versity and inclusion of women and other underrepresented groups in informa tion technology: the so cial justice case and the innov ation case. T he social justice case appeals to us with "it's the right thing to do," as a h umanitarian call for f airness, equal representation, and opportunity, within both academia and indus try. Its antecedents echo from civil rights and feminism, backed by decades of social progress and r esearch. The innovation case is a mor e recent phenomenon, emerging from best practices and research that points to the competitive advantages of diverse work teams along dimensions of innov ation, productivity, efficiency, and problem solving.

In both cases, the cont ext for an all-h ands-on-deck call t o action is at once overwhelming and compelling. In higher education, in 2011 women earned 57 percent of all under graduate degrees but only about 18 percent of de grees in computer sciences, which is the lowes t for any STEM field. For women who also belong to one or more ethnically underrepresented categories (e.g., black, Hispanic, Native American), the number of computer science graduates dwindled to 4.8 percent in 2012.[1] These numbers are reflected in indus try, where women hold only 26 percent of U.S. tech jobs and make up only 19 percent of software developers.[2] Likewise, when Google bravely released its diversity numbers in the summer of 20 14, it revealed some uncomfor table facts: only 17 percent of its IT workforce were women, only 2 percent Hispanic, and only 1 percent black. Other tech giants followed Google's example and also released their diversity data, showing similar numbers.[3] Meanwhile, the size and influence of the tech sector in nearly all spheres of modern life has exploded.

The Best and the Brightest?

It has long b een assumed th at assembling the b est and the brightest in the r oom will yield the b est and the brig htest results. Therefore, searches for the b est talent have, over time, increasingly narrowed the collective sense of who does tech best (and who does not) and where to recruit them (and where not). But these assumptions are now being called into question.

Scott Page's landmark 2007 book *The Difference* makes a compelling case for the v alue of di verse teams. Through case studies and mathematical modeling across a range of organizations (industry, education, communities), he details the relation between diversity of p eople and strength and functionality of organizations in t erms of pr oductivity and pr oblem solving. Throughout, he demonstrates that diversity can trump a bility. Other research has demonstrated that the numb er of w omen on work teams is a s tronger predictor of a gr oup's collective intelligence than is the t otal IQ of a gr oup's individual members. Additional studies have shown that gender diversity benefits organizations along dimensions of financi al health, productivity, efficiency, employee performance, and innovation.[4]

Even though exactly why and how "p eople diversity" translates into "functional diversity" to yield the b enefits in innovation and productivity is a topic of ongoing investigation, such evidence signals us t o rethink competitive strategies for recruiting and building di verse work teams. Primarily, it shifts the focus from acquiring the b est *individuals* to assembling and empowering the most effective *teams*. In this sense, the strategy is akin to that in *Moneyball*, the b ook and film c hronicling the paradigm shift in ma jor league baseball: using anal ytics and data to move away from evaluating and hiring "star players" and toward evaluating and hiring eff ective teams. In informa tion technology, the emphasis is on building teams for greater functional diversity—that is, diversity of thought. And in this sense, it is worth noting that such a clear plus for the innov ation case of diversity and inclusion is fundament ally rooted in its social justice case, since diversity of thought ultimately stems from a diversity of life experience and identity.

But recruiting for di verse teams won't do an y good if we don't create environments in which women and minorities are retained and can thrive. Currently, women in the tech industry have a qui t rate double that of men. A ccording to a r eport by the Center for Talent Innovation, 80 percent of U.S. women in SET (science, engineering, and technology) say they "love their work," yet 56 percent leave their private-sector organizations midcareer. This represents a huge brain drain, not to mention millions of dollars in inves tment walking out the do or, most often to competitors, start-ups, and nonprofits.[5]

Unconscious Bias Goes to Work

What is the " secret sauce" to engaging and r etaining more women and minorities in information technology? It starts with the social processes that inhibit diverse participation. By now, most of us ar e familiar with *unconscious bias:* implicit associations that everyone makes regarding gender, ethnicity, age, sexual orientation, etc. These biases can unfairly disadvantage and disenfranchise people who are members of underrepresented or historically marginalized groups. Unconscious bias is part of our mental makeup and our culture. However, recognizing it and raising it to a *conscious* level allows us to address it, interrupt it, and mitigate its potential negative impacts.

Unconscious bias in the w orkplace manifests in ins titutional barriers that may include the following:

■ *Recruiting practices:* biased sourcing of candida te pools; job ads that include bi ased language and mess aging; biased

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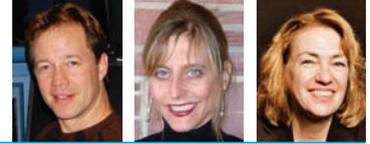
résumé-review processes and interview strategies, including all-male interview committees

■ *Retention factors:* unequal pay for equal work; environmental elements signaling that women and/or other minorities do not belong, including "geek-culture" décor and "bro-grammer" culture; lack of support for competing work and life responsibilities, including flex-time; biased annual performance review protocols and criteria that subtly favor men and reinforce the dominant culture

■ *Advancement:* biased and/or hidden advancement processes and criteria that subtly favor majority group members over minorities; lack of effective sponsorship for women and minorities; lack of role models and peer-group members for women and minorities in positions of power (a self-reinforcing cycle)

In addition, unconscious bias can be represented by interpersonal barriers and challenges:

■ *Micro-inequities and micro-aggressions:* subtle but cumulative slights and exclusions that occur daily ("Dude, let's talk about it over a beer")

■ *Stereotype threat:* the fear of reinforcing negative stereotypes associated with an identity category, resulting in behavior that can significantly affect performance, participation, and sense of belonging

■ *Tokenism:* the expectation that someone represents and can speak for all others in a specific identity category, often resulting in women and minorities avoiding participation in "women's groups" or diversity programs

■ *Personality penalties:* being labeled as pushy, aggressive, or bossy for the same behaviors for which male or majority group counterparts are praised

Solutions

There is no single recipe for success in attracting and retaining diverse IT teams. Nevertheless, colleges and universities can lead the change, for both the professional sector and higher education. How?

First, educate top leaders and managers about the facts regarding women and other diverse people in information technology, training leaders to recognize and address unconscious bias in both its institutional and its interpersonal forms.

Second, recruit more diverse people. Hiring staff that embody a diverse and inclusive environment sends a strong message. Doing so requires a proactive recruiting strategy that follows from a top-leadership directive to seek out and hire a diverse staff and that does not in any way lower standards to accomplish this goal. A review of job ads for language that may include unconscious bias is also needed, as is sourcing to a wider range of potential candidates in order to change the traditional demographics of IT applicants.

Third, retain and advance diverse employees. As pointed out above, recruiting will do little good if retention is not achieved. And this means changing the culture of an organization—from its policies and procedures down to the ways individual employees interact—in order to remove the barriers that exclude diverse people and the benefits they bring. To enable this scale of change, the National Center for Women & Information Technology (NCWIT) has assembled an industry reform model for organizations to use.[6] Its purpose is to frame a strategic approach to organizational change that promotes diversity and inclusion and to do so in a way that encourages customization to the specific needs of different groups. This framework emphasizes a holistic effort that bridges strategic and tactical action.

Finally, be accountable for change. Organizations must set targets, measure progress, and conduct and apply research for new ways of addressing these challenges. NCWIT is proud to be undertaking, in collaboration with Internet2, a new research project to gather and analyze gender diversity data from member organizations. This information will form a baseline from which the Internet2 community and individual member organizations can assess where they stand and then measure meaningful progress.

Casting diversity and inclusion as both a social justice case and an innovation case, dispelling the myth of "the best and the brightest," shifting focus to building and supporting diverse teams in order to reap their demonstrated benefits for *all* people (majority and minority alike), and adopting a strategic change effort that is holistic in design are steps along a pathway of progress with clear and elevating goals: diversify; innovate; and celebrate the wealth and potential of our differences. ■

Notes

1. National Girls Collaborative Project: https://ngcproject.org/statistics. Women in information technology reached a zenith in the mid-1980s, at nearly 40 percent representation, and again in 2002–2003, but that number has been in steady decline over the past decade. See National Center for Education Statistics: https://nces.ed.gov/programs/digest/d12/tables/dt12_349.asp.
2. U.S. Department of Labor, Bureau of Labor Statistics, 2013 (Occupational Category: 15–0000).
3. Alison Griswold, "Google's Workforce Is Mostly White and Male," *Slate*, May 28, 2014,; Alison Griswold, "When It Comes to Diversity in Tech, Companies Find Safety in Numbers," *Slate*, June 27, 2014.
4. For a detailed summary of much of this research, see Lecia Barker, Cynthia Mancha, and Catherine Ashcraft, "What Is the Impact of Gender Diversity on Technology Business Performance?" National Center for Women & Information Technology (NCWIT) Research Summary, May 29, 2014.
5. Sylvia Ann Hewlett and Laura Sherbin, Athena Factor 2.0: *Accelerating Female Talent in Science, Engineering & Technology* (New York: Center for Talent Innovation, 2014).
6. The NCWIT IT Industry Reform Model can be found in "Strategic Planning for Increasing Women's Participation in the Computing Industry," National Center for Women & Information Technology (NCWIT) Workbook, April 1, 2010.

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