



## The Benefits of Diversity in Tech

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The lack of diversity in the workforce, especially within STEM field jobs, has been gaining national attention but despite workplace gender and racial equity becoming a priority for young tech workers, the industry hasn't kept pace with its workforce's changing values. It's hiring and promoting practices have not evolved for the 21<sup>st</sup> century. Nationwide men hold 76% of technical jobs and white Americans represent 95% of the tech workforce despite women constituting 51% of the workforce and American racial minorities representing 39.5% of the U.S. population<sup>1</sup>. If current trends hold, by 2045, white Americans will become represent less than half (49.5%)<sup>2</sup> of the country. Within Massachusetts, often lauded as one of the most progressive states, these figures still echo national level data. In the Commonwealth, women hold 49% of jobs but only account for 28% of computer, engineering, and science occupations; African Americans hold 7.5% of jobs, but only 3.4% of computer, engineering, and science occupations; and Hispanic or Latino individuals hold 10.5% of jobs, but only 5.7% of computer, engineering, and science occupations<sup>3</sup>. To keep pace with the changing American landscape, tech firms need to innovate to bring diverse talent into their workforces. Tech industry leaders, alongside the Baker Administration, believe that establishing greater equity in the workforce is imperative on grounds of fairness but also because strong research has provided evidence that a more diverse workforce leads to increased creativity, more innovation, better consumer understanding, richer brainstorming, and better decision making<sup>4</sup>.

## The Evidence

Supporting the beliefs of tech industry leadership and the Baker Administration, a 2012 McKinsey & Co report found that based on data from 180 public companies in the U.S. that those with diverse leadership and executive boards achieve a 95% higher return on equity\* (a measure of how effectively management is using a company's assets to create profits) than their counterparts with traditionally homogenous white and male leadership<sup>5</sup>. These boosts to profitability and productivity depend not just on diverse leadership but also on workforce diversity throughout divisions in a company. Researchers at the University of Tennessee at Chattanooga published a study based on data from 130 organizations across the southeastern United States that showed that employee perceptions of diverse senior management and diversity at the non-manager level *both* increased employee productivity and performance<sup>6</sup>. More convincingly, in 2003 in *Academy of Management*, David Kravitz at George Mason University published the results of a study conducted on firm performance at various levels of gender representation; it found that firm performance increased as the percentage of women increased until women represented 50% of the workforce at a firm<sup>7</sup>. Firms that underrepresent women and racial minorities miss out on the

\*Return on Equity: A measure of financial performance equal to Net Income divided by Net Assets. It is a useful measure for comparing relative performance of firms. Within the tech industry, it is generally around 18%.

productivity offered by their talents, insights, and innovations. Bringing in talent from diverse racial, gender, age, disability status, socioeconomic, and educational backgrounds brings a variety of perspectives that increase creativity and problem solving capabilities of any team. Often, homogenous teams will miss out on their customers' needs when they differ from their own. Digital and tech products have become now ubiquitous and unavoidable in all aspects of day-to-day life, but though they seem one-size-fits-all, customers often interact with a single product in very different ways. Diverse teams have the opportunity to catch problems arising from diverse needs among their customer base earlier in the design process. Both racial and gender diversity have been shown to increase sales revenue, attract more customers, capture greater market share, and create greater relative profits<sup>8</sup>. Office culture can benefit from diverse teams by introducing a range of workstyles, increasing representation for younger employees seeking mentors, and create an environment where everyone feels comfortable.

### **The Double Marginalization Problem:**

All companies, but especially tech firms, invest heavily in attracting and promoting the best talent. Because the hiring process and promotions both have high opportunity costs, and require managers to “bet” on the success of a candidate, they tend to make risk-averse decisions. It is better for them to go with the “safe” choice that matches what success has looked like in their firm before: usually white and male. The small risk that a minority candidate might not live up to expectations can lead to small statistical biases in hiring and promoting such that a traditional employee is only slightly more likely to get the position than the minority candidate. Consider a company in which equal numbers of men and women apply for a firm, but for every 6 men they hire, they only hire 4 women. Though the statistical discrimination is small at each level of evaluation, it can compound through the levels of a company. Since this “statistical discrimination tax” is applied at every level of evaluation, the percentage of women will shrink at each step up through the company as it gets applied multiple times<sup>9</sup>. In microeconomics, this is called the double marginalization problem. Even a few percentage point tax, will grow beyond what is “fair” or “rational.” In practice, this means that companies only looking to meet a quota will have a small “tax” that seems rational to management because each manager wants their pick to be a success and they don't want to take a risk, however small. For the company as a whole the actual statistical discrimination, and the overrepresentation of certain demographics, is based on both the initial tax and how many times that tax is compounded. Each manager made individually rational decisions but harm the company overall. Such practices lead to fewer women and people of color in higher-level management positions – a large factor in creating the well-known Glass Ceiling effect.

Attracting diverse talent into a homogenous workforce can be difficult, but retaining that talent is often an even greater challenge. Jori Ford, writing for *Entrepreneur*, argues against such a quota system, saying that it creates a culture of tokenism. Instead, she advocates for creating inclusive cultures and making diversity and inclusivity part of the company mission<sup>10</sup>. Companies

oriented around social equity goals have experienced a lot of success in recent years, both economically and in retaining diverse talent.

## Where to Go From Here

Rob May, an angel investor and the cofounder of Talla, a Boston AI-software company, noted in a recent TechHire panel discussion that tech companies that have achieved diverse workforces tend to have a common trait: early hires in their startup phase tend to be more diverse. As these companies grow, early employees recruit new talent from within their own social networks and give an implicit endorsement of a supportive and diverse company culture. Early investment in diverse hires pays off; such companies usually have higher retention rates of both women and employees of color<sup>10</sup>.

The startup method isn't the only way companies can create the diverse workforce they're looking for. Massachusetts has a wide range of training programs and educational institutions, from non-degree bootcamps to 4-year colleges and universities that impart valuable tech skills and knowledge to students. Graduates of these training programs often struggle to find jobs within the industry, despite the well-known and persistent demand gap for talented programmers and IT staff. In Massachusetts, tech employers, tend to hire from only a select few private universities. Graduates of state universities and tech-training programs tend to better reflect the Commonwealth's demographics and offer a pool of talent from which these firms can draw to meet their goals.

In pursuit of these goals, some large firms are beginning to invest directly in training programs: Apple recently committed \$50 million to support computer science students at historically black colleges and universities and to the National Center for Women and Information Technology<sup>11</sup>.

Within hiring and promoting practices, blind testing and similar anonymization strategies create a more objective process focused on qualifications and aptitude without letting unconscious biases creep in. With in-person interviews, many characteristics that engender discriminatory decisions (consciously or not) such as race, gender, and age are visual. Blind testing bypasses these visual cues so that employers can evaluate the applicant's aptitude without other influences.

"Tech has cultivated a reputation as one of the world's most progressive and forward-thinking industries,"<sup>10</sup> but it has been slow to enact these sorts of systemic and culture changes. As firms do so, equitable practices and culture will create a welcoming environment for those who have long been outsiders in the tech world, and will drive the industry forward, for everyone.

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