

Lack of Gender Diversity in Tech Industry - Why It Matters

Select a company to see their full diversity report

		YEAR	EMPLOYEES*	Percentage in technology jobs	
				WOMEN	MEN
+	ebay	2015	21,353	24%	76%
+	Apple	2015	59,869	22%	79%
+	intel	2015	53,732	20%	80%
+	LinkedIn	2015	4,235	18%	82%
+	Google	2015	32,527	18%	82%
+	Microsoft	2015	59,796	17%	83%
+	YAHOO!	2015	6,138	16%	84%
+	facebook	2015	5,479	16%	84%
+	twitter	2015	2,910	13%	87%

<http://graphics.wsj.com/diversity-in-tech-companies/>

TSU-JAE KING LIU

DEPARTMENT OF ELECTRICAL ENGINEERING & COMPUTER SCIENCES

UNIVERSITY OF CALIFORNIA, BERKELEY

JUNE 13, 2017

Tsu-Jae King Liu

TSMC Distinguished Professor in Microelectronics



Education:

- BS: EE, Stanford University, 1984
- MS: EE, Stanford University, 1986
- PhD: EE, Stanford University, 1994

Career:

- *Member of Research Staff, Xerox Palo Alto Research Center, 1992-1996*
- *Joined UC Berkeley EECS faculty, 1996*
- *Co-founder & President, Progressant Technologies, 2000-2004*
- *Senior Director of Engineering, Synopsys, 2004-2006*
- *Faculty Director, Micro/Nanofabrication Laboratory, 2000-2004, 2006-2008, 2012*
- *Associate Dean for Research, College of Engineering, 2008-2012*
- *Chair, EE Division, EECS Department, 2012-2016*
- *Chair, EECS Department, 2014-2016* 2016-present: Vice Provost, Academic & Space Planning



Why diversity?

- Airbags were tested exclusively with crash-test dummies based on the male body.
- Voice recognition systems at first only recognized male voices.

Diverse teams or organizations comprise a wider range of viewpoints and skill sets, *i.e.* greater collective intelligence.

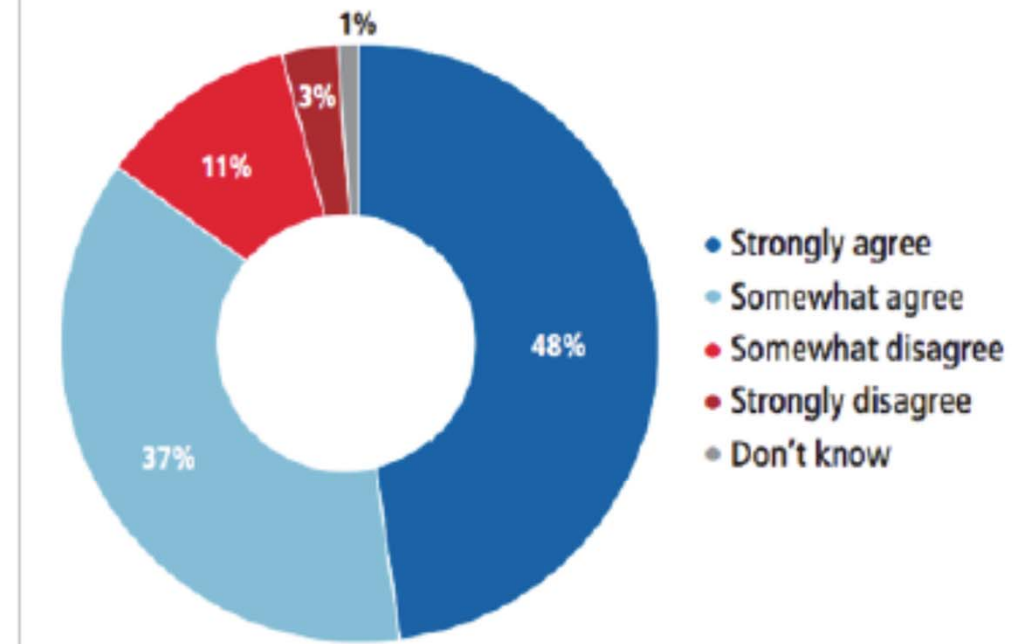
“Diversity is less about how you look and more about how you think.”

– Rich Lyons, Dean of the Haas School of Business



- ◆ diversity improves company culture
- ◆ diverse teams have greater collective intelligence
- ◆ teams that are reflective of the user base develop better products

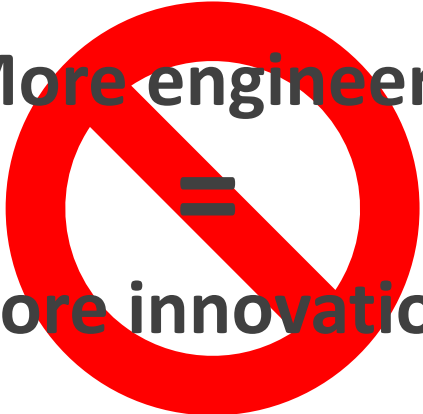
FIGURE 1: A diverse and inclusive workforce is crucial to encouraging different perspectives and ideas that drive innovation.



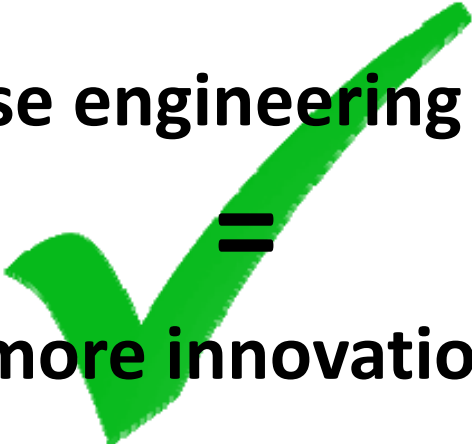
*Forbes 2013 Study

Diversity adds value

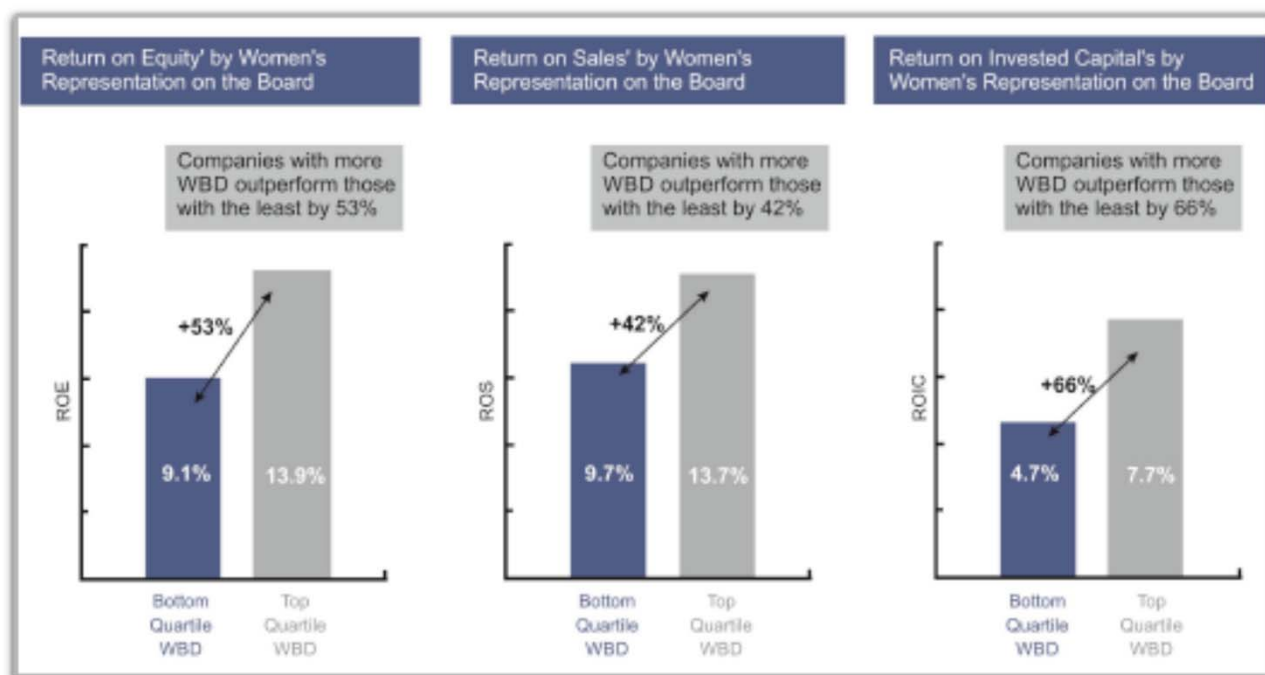
More engineers
=
more innovation



Diverse engineering teams
=
more innovation

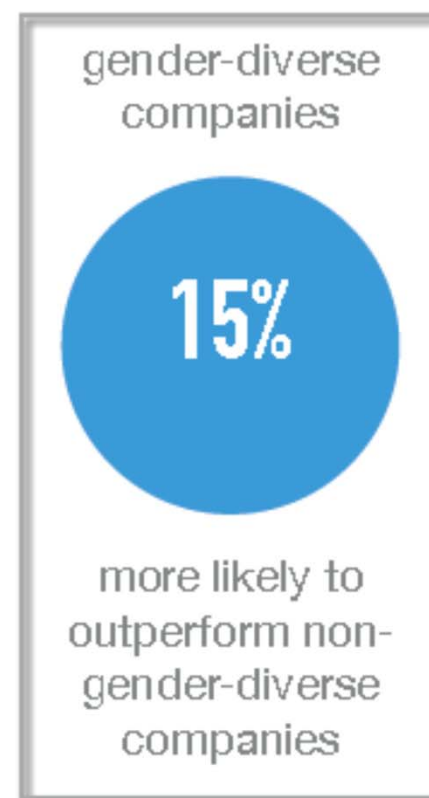


- Diverse perspectives are critical for addressing the multi-disciplinary, global problems we face. Furthermore, research shows that diverse teams are more creative and more effective.
- **Quality** of engineering is affected by diversity.



*Catalyst 2007

diversity improves
the bottom line



*McKinsey 2015

The Situation Today

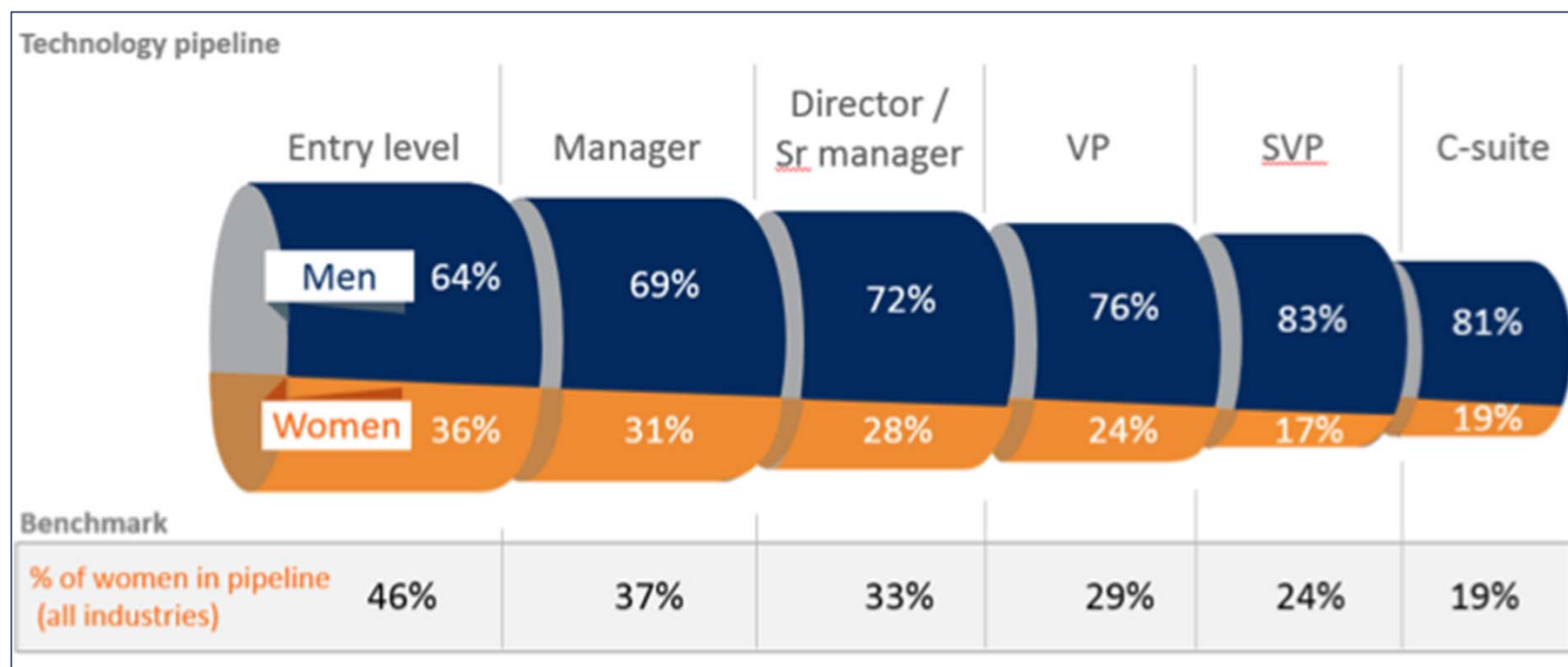
- High attrition rate of female engineers in the IT industry
 - 41% vs. 17% for male engineers [S.A. Hewlett *et al.*, 2008, HBS No. 10094]
- Women are more likely to exit STEM careers than non-STEM careers
 - 50% in STEM occupations vs. ~20% in non-STEM occupations exited
 - >30% of the attrition in STEM occupations occurred in the first 4 years
[J.L. Glass *et al.*, *Soc. Forces* 2013, 92(2), 723-756]

Root cause:

- Workplace experience is the most significant reason for women leaving engineering careers
 - Self-confidence & work-life balance are **not** significant contributing factors
[N.A. Fouad and R. Singh, 2011, WEPAN National Conference]

Women are underrepresented at all levels of the corporate pipeline

The statistics are even worse for women in technology¹



[1] Hardware, software, and IT services

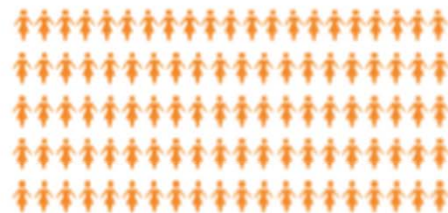
Source: McKinsey & LeanIn.Org Women in the Workplace 2016

The challenge starts early

Promotion rates for women lag behind those for men

Gap in rate of first promotions, from entry level to manager

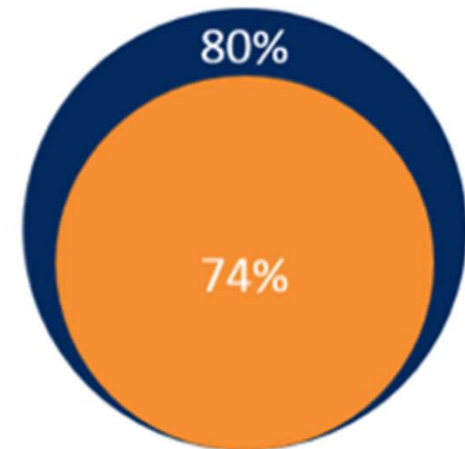
100 women



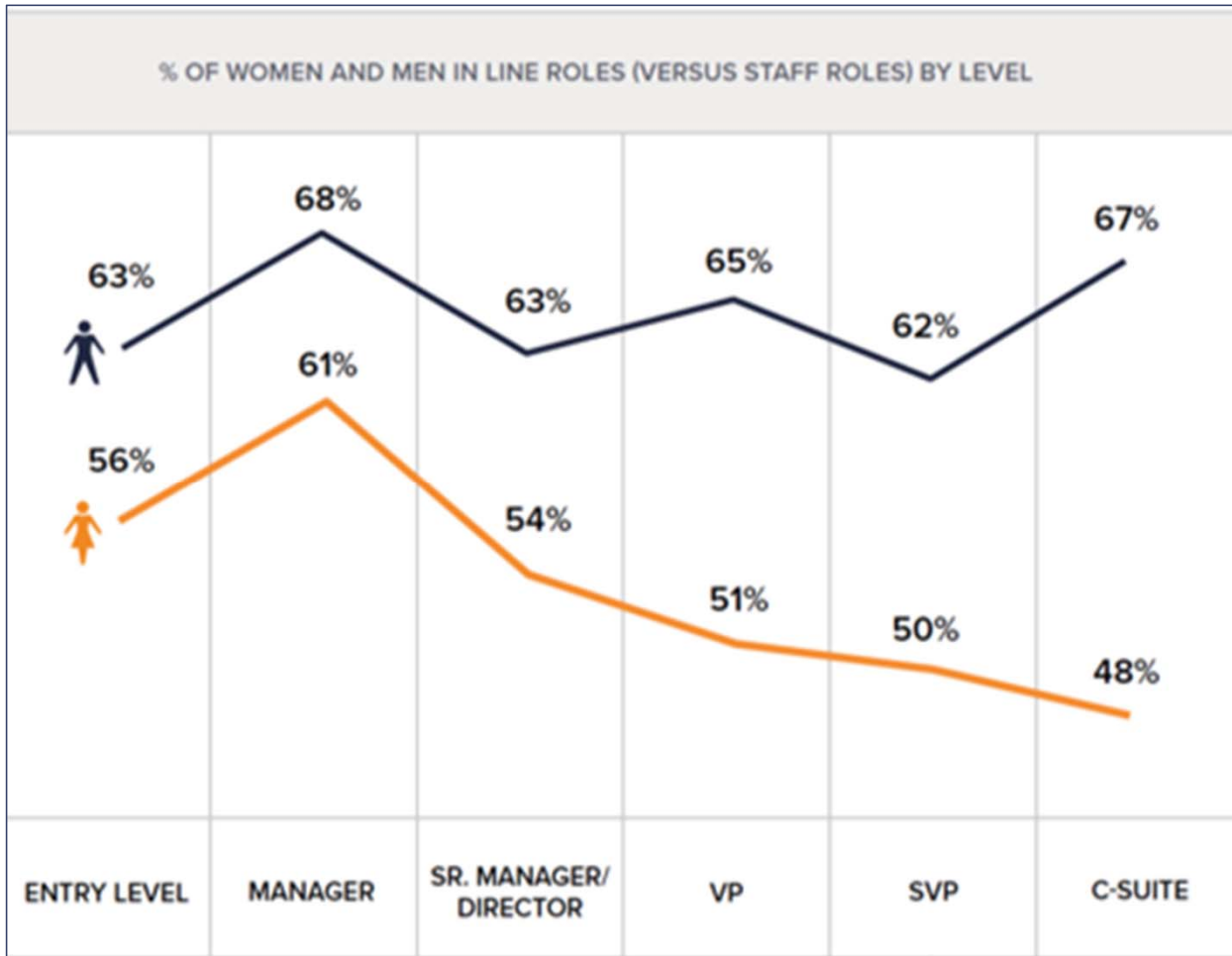
130 men



% of women and men who want to get promoted to the next level



Women Men

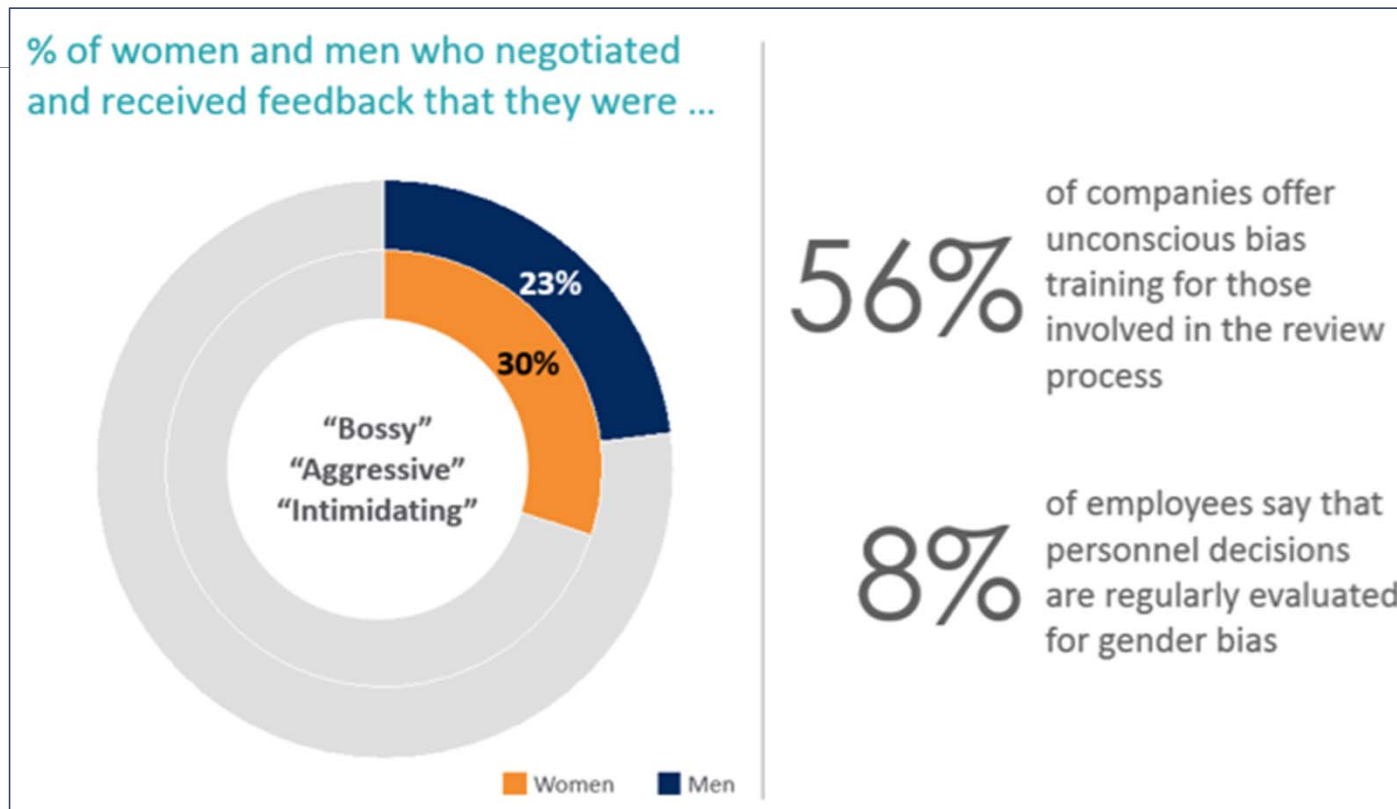


Women consistently get put into support and administrative roles

Root Causes for Lack of Diversity

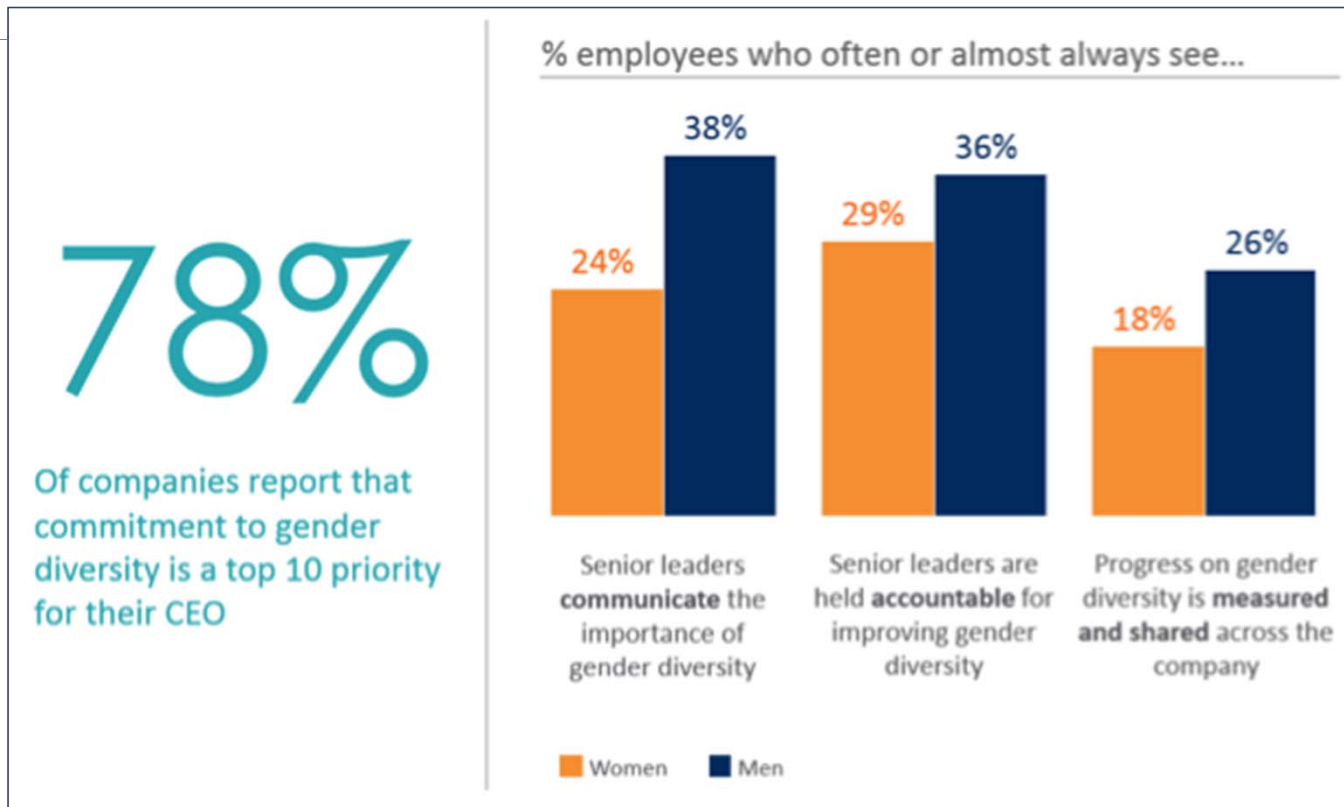
- ◆ **external**: bias, discrimination, harassment
- ◆ **internal**: impostor syndrome, self-confidence
- ◆ **competitive**: networks, work-life balance, role models, mentorship

Gender bias remains in the workplace



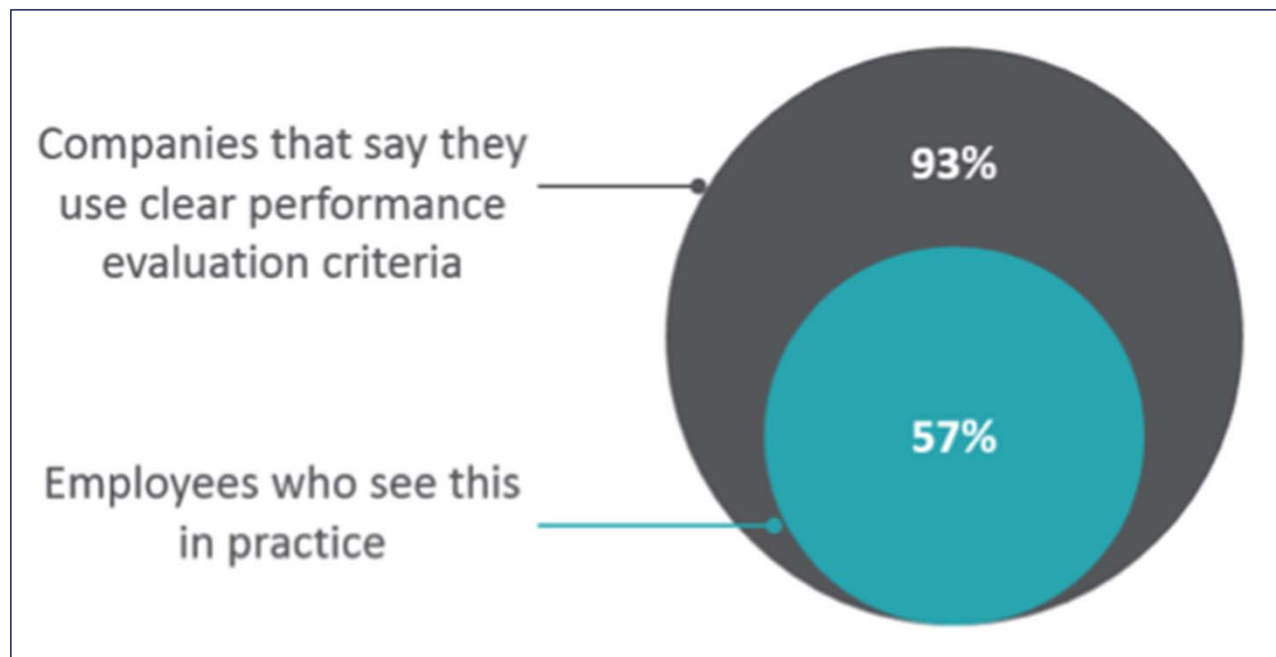
Source: McKinsey & LeanIn.Org Women in the Workplace 2016

Company commitment does not always translate to visible action



Source: McKinsey & LeanIn.Org Women in the Workplace 2016

Companies should ensure that hiring, promotions, and reviews are fair



Source: McKinsey & LeanIn.Org Women in the Workplace 2016

Collecting metrics can help companies track and make progress toward diversity goals

Metrics to benchmark progress

- Gender representation at selected levels of management
- Gender representation in selected functions / departments
- Gender representation by role
- Attrition by gender
- Gender representation of external hires
- Gender representation of internal promotions

Metrics to inform company policy

- Gender representation on interview / review panels
- Gender representation in assignment of high visibility projects
- Gender representation throughout recruitment funnel (e.g., Applicants, Interviews, Offers, and Acceptances)
- Salary and bonus difference at comparable job positions by gender
- Employee perception of work/life balance

Companies should also focus on accountability and results

40%

Of companies say they hold leaders accountable for performance against gender diversity metrics

32%

Of employees see senior leaders regularly held accountable for improving gender diversity

9%

See managers regularly being recognized for progress



NEW!

Women in Technology Initiative at the University of California (WITI@UC)

Mission:

Increase the persistence and success of women in technical fields in industry, academia, and the public sector

WITI@UC Programs

Advocate for Women

Cultivate Leadership

Highlight Achievements

Increase Awareness

Pave New Pathways

<ul style="list-style-type: none"> ➤ Leadership Round Table ➤ Promotion of Metrics & Tracking 	<ul style="list-style-type: none"> ➤ Professional Development (PD) Training Module Development 	<ul style="list-style-type: none"> ➤ Athena Awards Program 	<ul style="list-style-type: none"> ➤ WIT Conference 		2017
<ul style="list-style-type: none"> ➤ Leadership Round Table ➤ Promotion of Metrics & Tracking 	<ul style="list-style-type: none"> ➤ PD Training Module Deployment ➤ Entrepreneurship Training Module Development 	<ul style="list-style-type: none"> ➤ Athena Awards Program ➤ Women in Tech Role Models Initiative Launch 	<ul style="list-style-type: none"> ➤ WIT Conference ➤ Implicit Bias Awareness Training Module Development 		2018
<ul style="list-style-type: none"> ➤ Leadership Round Table ➤ Promotion of Metrics & Tracking 	<ul style="list-style-type: none"> ➤ Broad Dissemination of PD Training Modules ➤ Entrepreneurship Training Module Deployment 	<ul style="list-style-type: none"> ➤ Athena Awards Program ➤ Broadening participation in Women in Tech Role Models Initiative 	<ul style="list-style-type: none"> ➤ WIT Conference ➤ Implicit Bias Awareness Training Module Deployment 	<ul style="list-style-type: none"> ➤ Re-entry to Tech Program Development 	2019
<ul style="list-style-type: none"> ➤ Leadership Round Table ➤ Promotion of Metrics & Tracking 	<ul style="list-style-type: none"> ➤ Broad Dissemination of Entrepreneurship Training Modules 	<ul style="list-style-type: none"> ➤ Athena Awards Program ➤ Corporate support for Women in Tech Role Models Initiative 	<ul style="list-style-type: none"> ➤ WIT Conference ➤ Implicit Bias Awareness Training Module Deployment 	<ul style="list-style-type: none"> ➤ Re-entry to Tech Program Deployment 	2020