SPONSORSHIP OF WOMEN DRIVES INNOVATION AND IMPROVES ORGANIZATIONAL PERFORMANCE
EXECUTIVE SUMMARY

Attracting, developing and retaining talent are some of the biggest challenges facing the technology industries, and this is especially true in the semiconductor industry, where the talent gap is widely acknowledged to be growing. Women are under-represented in the workforce of these industries, pointing to a significant opportunity to address these talent challenges. Seeking ways to engage and support women in their careers, particularly through sponsorship and mentorship programs, is critically important to keep the talent pipeline full. Focusing in on the bottom line, studies have clearly shown that supporting a diverse workforce can achieve increases in innovation, profitability, valuations, thought diversity, and employee morale, yet the female workforce remains underutilized.

Research shows a clear gender imbalance in the workplace and describes some common barriers that make it difficult for women to reach leadership positions. These barriers often stem from unconscious bias and a lack of formal support for women, which could be easily overcome if companies start sponsorship and mentorship programs for women. This is a hidden opportunity for semiconductor companies and one that is well worth the effort.

This report examines the gender gap and the benefits of closing it. It focuses in on the power of sponsorship programs to give women more opportunities to grow into decision-making roles and highlights best practices companies in the semiconductor industry and others can adopt today to achieve those benefits long-term.
Key Advantages

There are many advantages to improving gender diversity in any company — in any industry. According to a Harris Poll, half of all Americans would rather work under women leaders. As shown by an investigation by Peakon of tens of thousands of workers, women-led companies tend to engender mission-driven cultures, strong top-down communication, and strategic compasses pointing in the right direction.

Studies also show that diversity at firms leads to better financial outcomes, and that women investors are more likely to invest in companies with female founders. According to a report from the research firm PitchBook and All Raise, a nonprofit that advocates for women founders and funders, venture capital funding in startups, with at least one female founder, more than doubled in 2018 to $46 billion globally, up from $21.9 in 2017.

It is in the best interest of individual companies – and the electronics manufacturing and design supply chain as a whole – to invest in the huge untapped potential that the female workforce represents. Tailored sponsorship and mentorship programs will help address the global talent pipeline problem, the greatest crisis facing our industry today. These programs will also enable companies to reach peak innovation and financial performance with the best and brightest minds at the table, while making the workplace a fair and equitable place of opportunity.

Ajit Manocha, CEO and President, SEMI

There are also many intangible benefits to a gender balanced and inclusive workplace. Employees who benefit from a diverse and inclusive workplace report
higher levels of job satisfaction, individual validation and a greater sense of community among peers. This is increasingly true for Millennials and Generation Z, the generations that will one day comprise the leaders of the semiconductor industry.

**The Ripple Effect**

When gender diversity is a priority, many positive changes tend to occur in an organization and society as a whole. Our findings showed that women are almost three times more likely to be on the fast track in organizations with at least one female senior leader. In addition, women progress further where there is transparency around pay targets, and in turn this helps to narrow the gender wage gap. Companies with leadership teams that are accountable for improving gender diversity are 63 percent more likely to have greater female representation in executive leadership positions.6

> I strongly believe that diversity of opinion enriches strategy to execute. Our goal is to close the gender diversity gap across our organization, and we have put programs in place to accomplish this such as a formal mentorship program, training, STEM initiatives, and encouraging female leaders to join industry associations and attend industry conferences to attract women candidates. These are just a few examples of what can be done to close the gap.

**Larry Smith, President of Tokyo Electron US.**

Gender diversity also directly impacts advancement and pay. In today’s workforce, the current ratio of male to female managers is 100 men for every 34 women. If this were to increase to 100 males for 84 female managers, this could lift women’s earnings in the US alone by $2.9 trillion and women’s pay could increase by 51 percent or up to an additional $30,000 per woman each year.7
These results echo key findings from a previous Accenture report, “When She Rises, We All Rise,” in which 40 factors were identified as being influential in the advancement of women across leadership, enabling comprehensive action and fostering an empowering environment. When implemented, not only are women more likely to be successful in climbing the corporate ladder and reaching equal pay, but the company itself can also be more successful at meeting its business and financial objectives.

**Advance to Manager**

<table>
<thead>
<tr>
<th>Women</th>
<th>+35%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>+23%</td>
</tr>
</tbody>
</table>

**Advance to Senior Manager/Director**

<table>
<thead>
<tr>
<th>Women</th>
<th>+280%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>+118%</td>
</tr>
</tbody>
</table>

*Figure 1: Increased likelihood of advancing to leadership positions when the 40 factors are most common.*

*Source: Accenture*

**Lack of Women in Technology**

The technology industry is one area where gender diversity can be improved. While 47 percent of today’s workforce are women, they represent just 25 percent of US IT workers. One explanation is the educational path women are choosing for their undergraduate degrees, though the divergence from STEM subjects begins well before women enter college.

While 57 percent of college graduates are women, men remain twice as likely as women to study engineering with only eight percent of female undergraduates
pursuing IT degrees and a mere eight percent becoming engineering graduates. Considering this educational STEM gap, it’s unsurprising that just eight percent of technology patent holders are women, and VC funding for technology startups founded by women is just two percent.⁹

At the highest level, the data is even more disappointing; few major semiconductor companies are led by female CEOs. Advanced Micro Devices (AMD) is one of a few US semiconductor companies with a woman at the helm in its peer group. AMD’s CEO, Lisa Su, has steered a remarkable turnaround for the company as she continues to navigate the male-dominated semiconductor industry. Upon becoming CEO and persisting through a year of organizational growing pains, Su was able to kickstart growth acceleration, demonstrating substantial year-on-year revenue growth since 2016. Her leadership resulted in a nearly 300 percent stock rise in 2018.¹⁰

In interviews with leaders of global semiconductor companies, we found that many organizations are dedicated to improving these statistics. For example, National Instruments provides merit-based individualized sponsorship opportunities for its employees.

STMicroelectronics offers two training sessions a year for more than 200 women to develop into future leaders, and they also have specific quotas for visiting universities and schools to promote the recruitment of women and people with disabilities.
Identifying the Problem

As these findings indicate, the STEM gender gap is real and it’s growing. Why the disparity? In addition to the cultural conditioning of young girls away from STEM, perhaps the answer may lie in the way girls spend their time online. Despite spending more time online than their male peers, girls are less likely to engage in digital activities that promote upskilling, continuous learning, and career path management, according to a study by Accenture. Young women may not be directed to seize digital learning opportunities in the same way as their male peers, and thus are falling behind starting at an early age.

There are many factors that contribute to the STEM gap such as social conditioning of boys and girls, and a lack of female role models in STEM. One clear factor is that 58 percent of men have a mentor, compared to 45 percent of women, and the disparity is even greater when it comes to sponsorship. There are also social perceptions that contribute to this gender disparity.
Could Gender Bias be Playing a Role?

While there is an abundance of publicly available industry data and employment reports that demonstrate that women are substantially underrepresented in technology roles and at technology companies, research shows that men are far less likely to perceive that gender inequality exists at their organization. This gender bias can result in unequal pay, unequal opportunities for advancement, differing interview questions during the appraisal and recruitment processes (such as asking female candidates and employees if they plan on having children), and other glass ceilings being placed above female employees.\(^{14}\)

To combat this, technology organizations must implement relevant mentorship and education programs, trainings, cultural support and more for all levels of employees, and allow for far more open conversations amongst HR, business leaders and the broader employee workforce.

“Positive endorsement by other women in leadership is critical for combatting gender bias. I encourage my peers and team members to bring at least 50 percent of the proposed promotion candidates as team members of diverse backgrounds, asking them to describe reasons for promotions for the other 50 percent that include their capability to support and encourage open dialogue around alternative viewpoints such as active diversity inclusion.”

Susan Weiher, VP of Engineering Operations at Osram.
The Progression of Sponsorship

Women continually cite lack of support as one of the primary reasons for gender disparity in the workplace. However, the impact starts early on; young girls do not have equal access to mentors and sponsors that might encourage them to enter into STEM fields. As a result, girls tend to gravitate towards the traditional gender-biased roles such as healthcare workers and teachers. To be successful, sponsorships should start in grade school and continue through university. More young women entering STEM-related industries may lead to the natural progression of sponsorships within companies where the focus can be on retention and career growth.15

Figure 3: Successful sponsorship starts in grade school and continues through university and beyond.
Fortunately, there are many existing programs that aim to help young girls foster an interest in STEM. These programs provide girls with opportunities to learn new skills and gain access to mentors and sponsors that encourage them to pursue careers that were previously not considered attainable. Below are a few examples of these programs. However, technology organizations have a great opportunity to take action to improve the situation by implementing their own outreach programs.

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoderDojo</td>
<td>A network of free, volunteer-led computer programming clubs for young people aged 7-17.</td>
</tr>
<tr>
<td>Girls Who Code</td>
<td>A US non-profit organization that runs summer programs teaching programming skills to high school girls.</td>
</tr>
<tr>
<td>I Wish</td>
<td>An Irish initiative hoping to encourage more female students into studying STEM subjects.</td>
</tr>
<tr>
<td>WISE</td>
<td>A UK non-profit organization that hopes to increase the presence of women in STEM jobs from today’s rate of 13% to 30% by 2020.</td>
</tr>
<tr>
<td>Girls in Tech</td>
<td>A global network of groups that aims to boost the visibility of women in tech jobs by hosting events and providing employment resources.</td>
</tr>
</tbody>
</table>

**Figure 4: Programs helping foster an interest in STEM among young girls.**

At the corporate level, there are a variety of programs that semiconductor companies can leverage to promote the advancement of women throughout their organizations. These programs consist of both mentorship and sponsorship initiatives. These formal programs use professional and personal aspirations as criteria to match employees with mentors and sponsors. When successful, mentorships and sponsorships can forge cross-divisional relationships between leaders and entry-level employees. Mentors can guide and coach developing professionals, while sponsors can use their clout to advocate for the advancement of their protégé and help them access opportunities to further career ambitions.

There are also women-focused organizations that provide mentorship, best practices, and advice outside one’s organization such as Advancing Women In Product (AWIP), Advancing Women Executives (AWE), Women in Technology International (WITI), and a number of events dedicated to discussing topics to help guide the advancement of women in technology sectors.
For more than 10 years, Andreia Cathelin, a Technical Fellow at STMicroelectronics, has been mentoring women regularly inside and outside her company and is also active in various women’s groups.

Mentorship programs have been essential for the personal development of women in the industry,” said Cathelin. “When done properly, they can add value to the business, increase engagement with women and drive innovation for the benefit of the entire company.

Andreia Cathelin, Technical Fellow at STMicroelectronics

Sponsorship vs. Mentorship

Mentors and sponsors can lead to career development and advancement, but they serve different roles. Harvard Business Review (HBR) found formal mentoring programs boost minority and female representation in management on average by 9 to 24 percent.16

The difference between a mentor and a sponsor is that a sponsor not only advises, but actively helps advance the career of their protégé. For example, a sponsor can be an executive or manager who uses his or her influence and political capital to champion the protégé. This sponsor can and should open doors and provide the protégé exposure to executives in her/his personal network that can help influence the protégé’s career and build senior-level relationships. The sponsor ensures the protégé is considered for promising opportunities and challenging assignments. She/he protects the protégé from negative publicity or demanding contact from senior executives and actively participates in the promotion process.

In contrast, a mentor listens, understands and provides coaching and advice. They share personal experiences to build a sense of connection and commodities, and
they meet regularly to help shape career ambitions and navigate through different roles and experiences.

According to Career Mentor, Toni Patterson, mentors provide a resource to practice ideas, level set on issues and give advice to handle various workplace issues. Sponsors, on the other hand, operate at a different level. They are senior people with power and influence, who are willing to stick their necks out to help in career advancement. “The value of sponsorship is in turbocharging your career by helping you to obtain key assignments and earn promotions quickly, often even before you think you are ready.” said Patterson.

“Knowing whether you need a sponsor or mentor depends on the career goals you are achieving,” says Megan Cohill, Director of Strategic Technology Solutions at TEKsystems. “Sometimes they are intertwined, and a mentor can help get you on a sponsor’s radar.”

Sometimes there is unconscious bias in sponsorship. According to The Sponsor Dividend, research by the Center for Talent Innovation (CTI) conducted in January 2018, 71 percent of those sponsoring others reported they are the same race or gender as their protégé. “Unfortunately, in most organizations, especially in technology, the person they reach down and tap to sponsor is someone who looks like themselves.” said Pooja Jain-Link, Executive Vice President of CTI.
Sponsorship of Women Drives Innovation and Improves Organizational Performance

Figure 5: Sponsors vs. Mentors – Similar but Different.  
Source: Center for Talent Innovation (CTI)
Does Having a Sponsor Really Make a Difference?

According to Harvard Business Review (HBR), having a sponsor can have a significant impact on a woman’s career development. HBR reported that 68 percent of women with sponsors expressed career advancement satisfaction. When they have benefitted from having a sponsor, women are 27 percent more likely to ask for a raise and 22 percent more likely to ask for the ‘stretch assignments’ that build their reputations as leaders.23

<table>
<thead>
<tr>
<th>SATISFACTION WITH RATE OF ADVANCEMENT</th>
<th>Women</th>
<th>Caucasians</th>
<th>Minorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITH SPONSOR</td>
<td>68%</td>
<td>67%</td>
<td>56%</td>
</tr>
<tr>
<td>WITHOUT SPONSOR</td>
<td>51%</td>
<td>45%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Figure 6: Rates of Advancement.
Source: Center for Talent Innovation (CTI)22
Sylvia Ann Hewlett, author of The Sponsor Effect: How to be a Better Leader by Investing in Others, states that with the help of a sponsor, women in STEM careers are 22 percent more likely to be satisfied with their rate of promotion. There is a 37 percent greater likelihood that these women will ask for a raise and a 70 percent higher chance their ideas will be endorsed. Additionally, they have a 119 percent higher rate of having their ideas developed and a 200 percent higher rate to see their ideas implemented.²⁴

Sponsorship and mentorship are critical, starting from the hiring phase through the leadership level. Sponsorship doesn’t necessarily change the direction of a career, but it sure does change the trajectory. The industry should be measured on what is going on at the beginning of the hiring process, not simply the end. The quality of your beginning entry-level talent pool is going to go a long way towards dictating the quality of your end talent pool in the C-suite.

Brad Kohn, SVP, General Counsel and Corporate Secretary, Cree

“Sponsorship of Women Drives Innovation and Improves Organizational Performance”¹⁵
Several semiconductor companies are already starting to recognize the value of sponsorship programs. Kate Wilson, VP of Marketing for Edwards in the UK, is the diversity champion within Edwards and her role is to educate and enthuse the organization about improving diversity. Edwards has had a mentorship and sponsorship program in place for women employees for the last two years, with the goal of increasing female employees from 19 percent to 30 percent by 2030. All sponsors/mentors at Edwards are part of the company’s senior leadership team or one level down.

Kate recognizes the value women can bring to the organization but notes that they don’t take as much risk when applying for jobs and often lack the confidence that men have in this industry. As an active diversity champion within the company, Kate regularly points out to women their qualities/skills to help them take more risks and apply for jobs/roles. Through these types of activities and a formal sponsorship program in place, Kate believes that they can achieve great results for decreasing the gender diversity gap. Some of the programs that Edwards has put in place include:

- External reaching programs into universities to encourage women to pursue careers in STEM post-graduation.
- Tailoring job descriptions to appeal to women in addition to men.
- Targeting female applications externally through recruitment agencies and women networks and connections.
- Company-wide programs such as mentorship, management training programs, and unconscious bias training.
- Internal promotion around an inclusive workforce, environment and attitude.
SPOTLIGHT ON INTEL

Intel has structured programs for mentorship, diversity and inclusion, and sponsorship. Mentorship starts automatically for new hires and there are a variety of levels, ranging from technical mentorship programs, voluntary programs for those who want to take initiative and seek out mentors, and informal mentoring.

Intel’s diversity and inclusion program has five pillars:

1. PIPELINE  A program of activities designed to encourage young women to enter STEM, for example, delivering career presentations at schools.

2. HIRING  The first stage of the hiring process involves blind CV reviews where applicant gender is hidden.


4. TECHNICAL LEADERSHIP PROGRAMS  These are designed to help develop a network and open doors for aspiring technical leaders.

5. INCLUSION  Encouraging people to bring their whole selves to work with programs focused on LGBTQ, disability, and workshops that include training on unconscious bias, which are also adopted into the hiring practices such as the blind CV reviews.

Sponsorship opportunities are available to a number of employees who can apply to the program. At Intel, it is reinforced that these programs are successful when there is strong, two-way communication.

“Any program, whether a diversity, mentorship, or sponsorship program, is only as effective as the commitment each person gives,” said Carmel McLoughlin, Acting Intel Ireland HR Manager. “Women being mentored need to be clear on what they want to be mentored on. I have mentored many women throughout my career. At Intel it gives them a safe way to learn the company and our culture and helps with career advancement.”
SPOTLIGHT ON MELEXIS

Companies can benefit greatly when gender diversity is valued at an early stage and then reinforced as the company grows. At Melexis, the company was founded 30 years ago by two male engineers and one female non-engineer and all three recognized the value of inclusion and diversity from the start. “We built the company to be all-inclusive, never looking at gender or nationality as part of our decision making,” said Françoise Chombar, CEO and Co-founder of Melexis.

Today, Melexis operates in 14 countries on three continents, has around 50 nationalities working for it, and was recognized as gender neutral by a university in Belgium in a case study that profiled Melexis as an example of how to accomplish gender equality in the workplace.

Françoise recognizes that achieving this gender-neutral status has required constant focus and dedication over the years because unconscious bias intimately lives in society. Some of the key things she recommends other companies to focus on include the following:

- Pay attention to the vocabulary, narrative, pictures (presentations, for example) that showcase people. Make sure all of those represent diverse illustrations.
- When a company recognizes unconscious bias, call it out. It is important that the habits surrounding conscious or unconscious bias with regards to age, gender or race are spoken about regularly.
- Instill basic values throughout the company around caring and respecting those employees work with, whether that be partners, suppliers, employees, or others.
- When you see people not honoring that value, address it so it is not repeated. “We have let people go because they could not behave according to our core value,” said Françoise.
Unlock This Hidden Opportunity Today

Companies in the semiconductor industry, as well as other technology industries, need to start tapping into the underutilized workforce of women. This is particularly relevant to the semiconductor industry where there is currently a talent shortage. This represents a clear opportunity for women to enter this market and is a hidden opportunity for semiconductor companies to reap the benefits described above that women have proven to provide to companies, particularly while in leadership positions.

In a recent report, SEMI stated that China, which accounts for 50 percent of global chip demand, needs 400,000 more semiconductor employees to meet its growing ambitions to develop domestic semiconductor manufacturing.25 Likewise, Singapore is attempting to address talent shortages in the specialized fields of electronics and electrical engineering manufacturing, which are considered the semiconductor industry’s building blocks. In 2018, the semiconductor industry had approximately 10,000 unfilled STEM positions, globally.26

If companies start breaking down the barriers that have held women back for decades, they can help close the gender diversity gap and address key challenges such as the talent shortage described above. Start by looking at your company’s current gender diversity ratio and work with management and HR to integrate the following activities in your company’s diversity strategy and plan:

- Put in place formal sponsorship and mentorship programs to encourage and motivate women.
- Place women on your board. Industry research has shown a direct correlation between the presence of women on boards and the presence of women in executive ranks.
- Assign diversity champions throughout the company.
- Seek out women for new hires and promotions within the company.
- Review job descriptions and remove any language biases that may discourage women from applying.
- Participate and/or sponsor programs that target young girls at an early age to encourage them to pursue STEM studies.
- Instill a culture of zero tolerance and enforce this company wide.
- Introduce formal training and education programs on unconscious bias and gender bias.
CEOs who personally commit to and own the design of inclusive cultures at their companies, such as at Applied Materials and Micron, ensure that this work goes far beyond a program or an initiative. They lead their teams to focus on systemic change that enables workplaces where great talent wants to be. For these CEOs, diversity and inclusion is core to their overall talent and business strategies.

Micron also has a mentorship playbook, outlining expectations for the mentor/mentee, discussion topics, and duration and frequency of meetings to facilitate the mentorship process, reducing the reliance on HR to get the program started.

When fostered from a young age and given the opportunity of a mentor or sponsor, women are more likely to reach leadership positions. This, in turn, may have a positive impact on companies through increased innovation, greater profitability, increased thought diversity, better employee morale, and higher valuations.

Lisa Su, CEO of AMD, actively mentors the technical women in the company with her hands-on-style. “I invest time with several of our AMD women groups, including the AMD Fellows Forum, Women in Technology Leadership and AMD’s Women Forum. At a young age, my parents encouraged a focus on math and engineering. I am very passionate about how extremely complicated devices change the way we live, work, and play,” said Su. “Our mantra to the team is focusing on great products, the company’s most important customers, and on simplifying everything AMD does.”

Ruth Cotter, SVP of Worldwide Marketing, Human Resources & Investor Relations at AMD, has taken advantage of the wealth of mentorship programs available to employees. “I am a big advocate for “MAC”— Be a mentor, advocate and coach,” said Cotter. “At different stages of our careers, we have different needs so embracing MAC is good for your professional development.”

**WHAT’S YOUR COMPANY’S CURRENT GENDER DIVERSITY RATIO?**

[Read more](#) about SEMI’s global workforce development and diversity and inclusion initiatives and reach out to get involved: [semifoundation@semi.org](mailto:semifoundation@semi.org)
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Authors

CASSANDRA MELVIN, Director of Operations, SEMI Europe
JOLIE LEBLANC, Accenture Strategy Senior Manager

Key Contributors

Deb Garand, Accenture Strategy Managing Director
Sohini Kar, Accenture Research Associate Manager
Lannie Trieu, Accenture Strategy Consultant
Syed Alam, Accenture Strategy Managing Director, Semiconductor Global Lead
Agneta Björnsjö, Accenture Thought Leadership Research Principal Director
Bettina Weiss, Chief of Staff, SEMI
Shari Liss, Executive Director, SEMI Foundation at SEMI
Samer Bahou, Senior Marketing Communications Manager, SEMI
Serena Brischetto, Senior Manager Marketing and Communications, SEMI Europe
Michael Hall, Marketing Communications Manager, SEMI

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