

# In Her Own Words

Breaking the Glass Ceiling Is Good for Business

JULY 2023



# Foreword

Manufacturers Alliance is committed to powering manufacturing leaders. Within its 90-year history, societal factors created an environment where “leaders” equated to men for decades. While strides have been made in society and in U.S. manufacturing, the sector remains stuck as a predominantly male field. It is critical we attract more women to manufacturing. It’s good for business. It’s good for employees. And a key component to solving the talent crisis.

As you will read in this research, while we’re seeing progress, particularly within the lower to mid-levels of management, there is still much to do to create a more equitable environment for women in C-level leadership. Through survey data and dozens of interviews, Manufacturers Alliance has brought together collective intelligence to share insights with women in their career journeys, along with ways companies can do more to support them (and thus create a more competitive company based on attracting and maintaining talent).

This research is important to spotlight paths that showcase how women can create careers that meet their needs in a rapidly evolving, dynamic, and the technologically sophisticated manufacturing sector. We need your talent and perspectives. We hope this report helps you create an environment where everyone can thrive.



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Getting more women into leadership roles is important for every industry, but it is especially vital for manufacturing. The sector lags others in terms of female representation, particularly in the C-Suite. What does it take to attract female talent to the industrial space and what can companies do to retain these women? And what guidance do current women leaders have for the next generation to improve their chances for a successful career in manufacturing?

Manufacturers Alliance took up these questions with a particular emphasis on women manufacturing leaders in operations, engineering, and those in legal, finance, and human resources. We had frank conversations with more than two dozen women in manufacturing who are passionate about their jobs, manufacturing as a career, and the importance of increasing gender equity. Each of these first-person perspectives is unique, and there is no monolithic female point of view. At the same time, we do see clear patterns in terms of where women are making progress and how.

## Methodology

This report is based primarily on first-person narratives gathered through interviews with women in manufacturing. We spoke with more than two dozen female leaders in Engineering, Finance, Human Resources, Legal, Marketing, Operations, Product Management, and Sales, both inside and outside of Manufacturers Alliance member community. We also conducted an online survey, teaming with other organizations to ensure breadth and scope of participation.

## Where We Are

Four million jobs need to be filled in manufacturing in this decade, about half of which require skilled talent. The sector is punching below its weight in terms of its ability to attract that talent, and when it comes to hiring and retaining women, manufacturing is struggling even more. Women represent 47% of the U.S. workforce overall, but only 29% in manufacturing, according to the **Bureau of Labor Statistics**. Only about **one in four** manufacturing management positions is held by a woman, which is on par with **private sector averages**. Moving up in the hierarchy, only 12% of C-suite positions in manufacturing are held by women, versus **16% in healthcare, and 21% in utilities**.

The current situation marks a setback from recent trends. The number of women in manufacturing overall had been on a slight, but **steady ascent** from 2010-2020. But when the pandemic hit, women were disproportionately affected, accounting for a **higher share** of manufacturing separations compared to men relative to previous years. Women's share of manufacturing also dipped in 2020 prior to recovering in 2021.

In many ways, history was repeating itself. Back up 75 years to World War II when more than 3 million women took jobs in manufacturing. Contrary to the Rosie the Riveter myth, most of these women were not housewives who flocked to factory jobs for the sake of their husbands serving in war. **Only 8%** of working women had a husband in the armed forces. Rosie was more often than not already employed in a different sector but attracted to manufacturing for the higher wages. When the war ended, surveys revealed the vast majority of these women wanted to stay on the job. But conversion from war-time production meant cuts and the jobs that remained were given to men based on **biased government policies** of the day and plant rules **selectively enforced** against women, such as demotion to janitorial work or transfer to third shifts. The result was such a significant uptick in hiring for men, the male labor force participation rate hit **86.6% in 1948**, a rate that has never been achieved since (the **2021 rate** for men is 68.5%).



**Women represent 47% of the U.S. workforce overall, but only 29% in manufacturing, according to the Bureau of Labor Statistics.**

Then, as now, manufacturing offered a particular fascination for many women. The vibrancy of the manufacturing environment was cited by several women we interviewed for this report. “I got a degree in Civil Engineering because I had a strong desire to work outdoors,” Emily Pajek, General Manager of Euclid Consumables at Lincoln Electric, told us. “That all changed the first time I walked into a manufacturing plant. There was so much noise, activity, and so many people, I instantly thought it was cool. I’ve been in manufacturing ever since,” she said. Lincoln Electric’s Executive Vice President and CHRO Michele Kuhrt said, “I love manufacturing, walking on the floor and even how it smells!” Several women told us about the inherent satisfaction of being in an industry that makes tangible goods. Whether you’re a woman or a man working in the field, you are more likely than not to **recommend manufacturing** as a career.

## Marching In Place — Where Current Trends Are Taking Us

Yes, women are increasing their share of employment in manufacturing, but the pace is very slow. Between 2010 and 2021, manufacturing added less than half a million women to its workforce. By 2031, manufacturing is expected to employ about **12 million overall**, and if current trends hold, only about 4 million will be female, or 30% of the sector's total workforce. **We are marching in place.**

From slow progress to no progress is not the right direction according to the women we interviewed. Jacquie Boyer, Senior Vice President and Chief

Commercial Officer at Sensata, captured the magnitude of the problem: “Especially after COVID, women took a really huge step backwards in the workplace. Prior to COVID, the World Economic Forum was saying women were going to reach parity with men globally in **about 60 years**. After COVID hit, it was **more than 130 years**. And that statistic hit me like a ton of bricks. So it wasn't going to happen in my lifetime. It wasn't going to happen in my daughter's lifetime, and it wasn't going to happen in my granddaughter's lifetime. That made no sense to me.”

## The Hollow Middle of the Female Management Pipeline

Across the economy as a whole, women are making more progress into management roles, but even there, some clouds are on the horizon. Women make up a growing share of junior professional and specialist roles, which hit **40% female** in 2023, a three-point increase over 2021. But at the senior professional, middle manager, director, and vice president levels, women have lost share since 2019, giving up hard-won gains during the pandemic. While women in the C-Suite (12%) grew by two percentage points, the hollow middle of the female talent pipeline is problematic for continued progress at the top.

Women from some of the companies we interviewed talked about steps they're taking to address the problem including proactively encouraging women to apply for open management positions. “Sometimes you lose a lot of women in the middle management levels of the company. This is the section of the organizational hierarchy where companies need to pay more attention because this is where they build for the future,” Irina Feldman, Vice President of Human Resources at The Heico Companies, explained. (Notably, the Heico Companies is certified as woman owned, operated, and controlled in those countries that recognize the classification.)



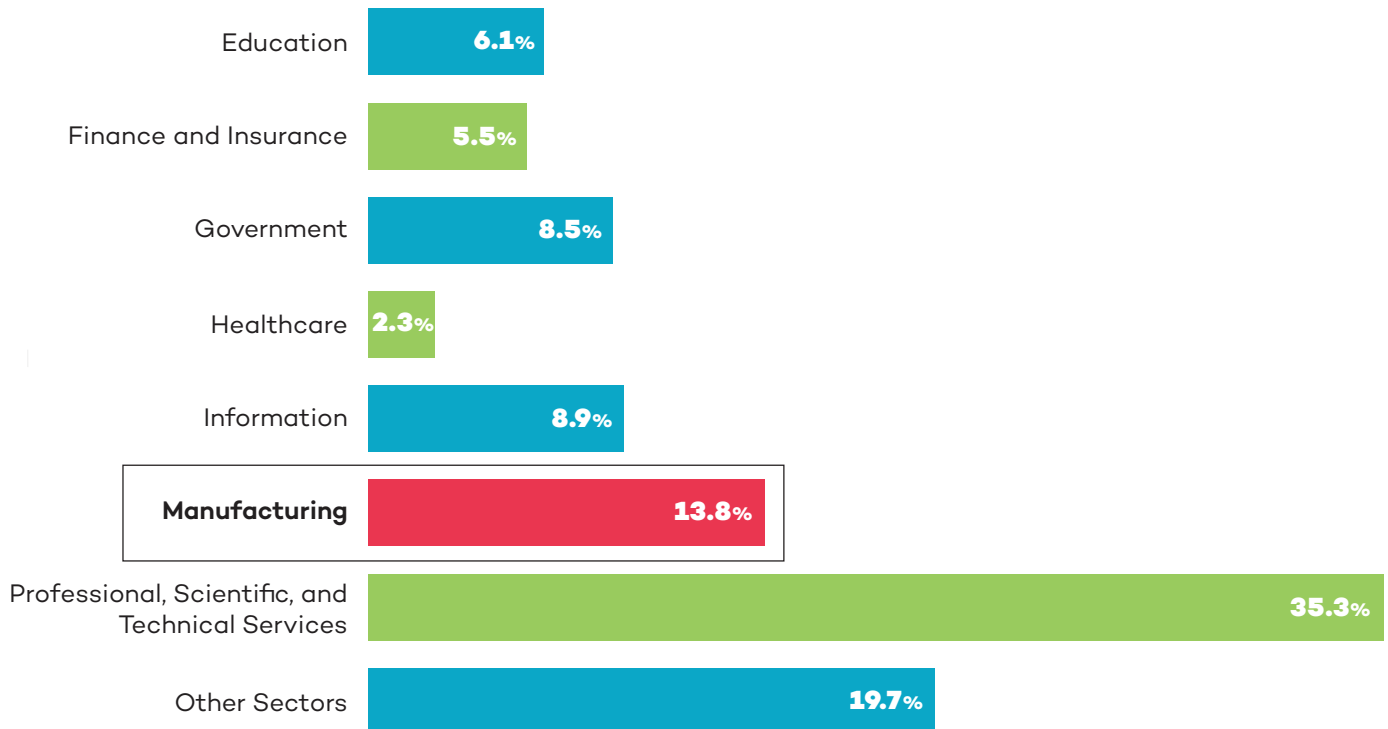
Every country and every industry need to make progress. For manufacturing, that means replenishing the pipeline and making careers in the sector more attractive to women than other industries competing for STEM talent (chart below).

**Studies show** that women leave manufacturing because they want more flexibility, childcare options, advancement opportunities, and female role models. Women are **finding these things** more often in life sciences, tech, and consumer products, but less often in the process industries and automotive. In fact, research by Chief and IBM's Institute for Business Value (IBV) shows that women are willing to take a **10% pay cut** when things like flexibility, childcare, more supportive management, and a stronger environmental, social, and governance (ESG) profile are present.



## Competing for STEM Talent

How much STEM talent gets hired in manufacturing compared with other sectors?



Source: Bureau of Labor Statistics STEM Data 2022



Has manufacturing become a better place to work? Views are mixed. We asked if significant progress had been made in manufacturing over the last five years in terms of providing equal pay and opportunities. Women were divided, with 37% saying “no,” 38% saying “yes,” and the rest unsure.

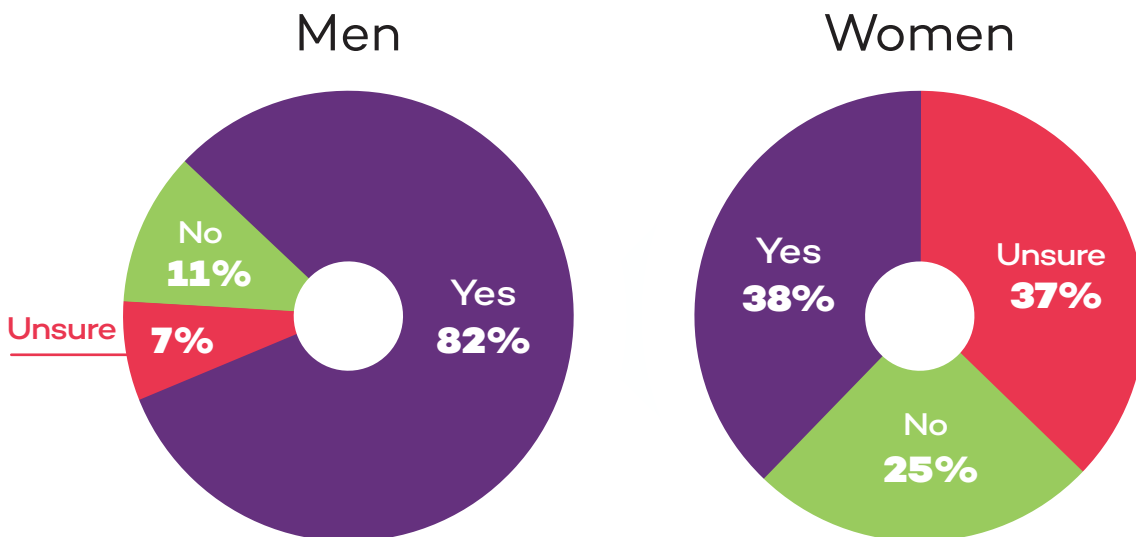
Men we surveyed had a different view. The vast majority (82%) reported progress with only 7% saying progress had not been made. The gap

between male and female views echoes larger disparities in perceptions by gender. According to [research by Pew](#), nearly one in three American men believe that gains by women come at the expense of men.

Men and women also have different views about whether the “old boys club” culture [still prevails](#) in business with 25% of women seeing this as a continuing problem versus 16% of men.

## The View Changes Depending on Your Gender

Do you believe the manufacturing industry has made significant progress in providing equal opportunities and pay to women in the past five years?



Source: Manufacturers Alliance survey

# Why It Matters

For businesses that lack gender equity, the penalty is growing in the areas of financial performance, innovation, customer satisfaction, employee job satisfaction, and retention. Research done by **McKinsey, IBV, Chief**, and others shows measurable improvements in all of these areas by organizations with higher levels of gender diversity. IBV and Chief take a close look at “First Movers” — organizations that have not reached gender parity yet, but still have higher levels of women in executive roles than peer organizations. From 2020-2022, these First Movers experienced 19% higher revenue growth and higher employee retention, a significant achievement during the Great Resignation. In organizations with a higher ratio of female executives, retention and job satisfaction rates increase including those of men.

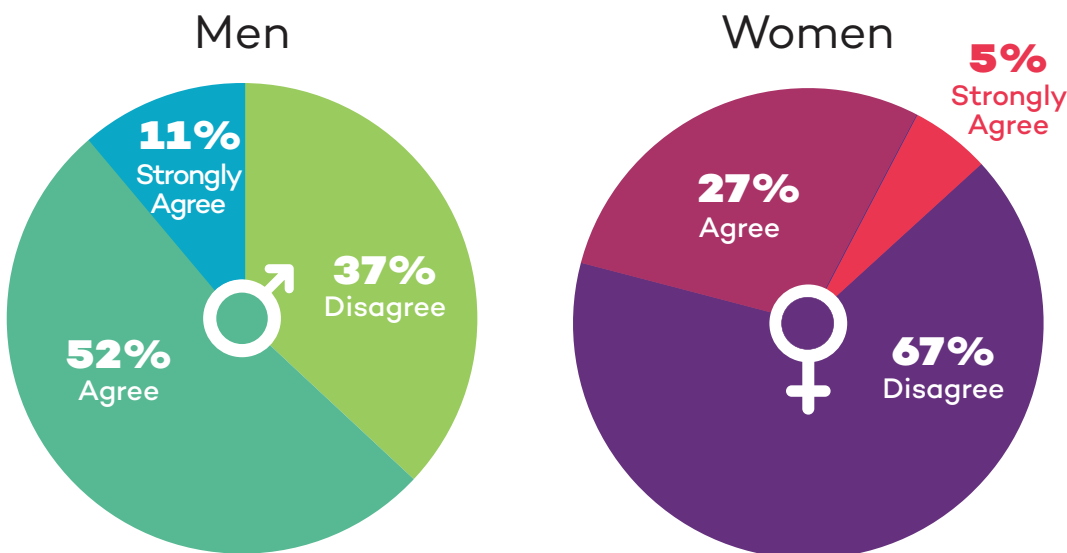
We have known for at least 50 years that homogeneity breeds **groupthink** and all the ills that come of it. The corollary is also true: Diverse teams are able to process information **more carefully and**

**creatively**. Conversations change when women are present. Cummins’ Executive Director of Global Manufacturing Elizabeth Hoegeman told us about a recent experience: “I was on the company plane coming back from one of our facilities with a group of women from our supply chain leadership team. The conversation was so different, we actually commented on it. The things that we can bring forward, that we perceive as challenges are different than if we’re sitting in a group of men.”

When conversations change, topics expand, and new points of view get plugged into the decision-making process. For a sample of the impact, look no further than the behavior of boards. Companies whose boards are more than 30% female are **more likely** to offer work-from-home and flexible workplace policies – policies that benefit all genders. Leaders at these companies are transforming where and when work needs to be done, a sea change in corporate thinking, which can only happen when more voices are heard.

## What Does a Leader Look Like?

Rate your level of agreement: My appearance does not influence how others judge my leadership skills.



Source: Manufacturers Alliance survey





## Structural Disadvantages – Nine Stubborn Obstacles Facing Women Leaders

**1 Lack of Flexibility:** Lack of flexibility in the workplace, as mentioned above, is a key obstacle to progress for manufacturing. This affects women caregivers in particular, who are treated as the default parent, but also people caring for elderly parents and others with special needs. Women are disproportionately impacted, and the imbalance became even more lopsided during the pandemic, which threw a spotlight on the unequal burden for childcare and household tasks falling on working mothers, including 60% more time on childcare, compared to working fathers.

**2 Unpaid Parental and Family Leave:** The United States, with its tapestry of state laws, company policies, and no federal mandate for paid parental leave, is a laggard among developed countries. Companies that do offer paid leave are more attractive to employees. As one woman told us, “My friends work at a different company nearby that just announced six months paid leave for birthing parents – a huge competitive advantage.”

Paid family leave can appeal to both parents and caregivers in general. Multiple women referenced the need to care for older parents or a family member with a serious illness.

**3 Competency Bias:** We repeatedly heard about the problem of men being automatically perceived as competent. “When I read the research, it’s clear that men might be trusted for their leadership regardless of their competency, whereas women might be tested a bit more,” one woman said. Annie Kao, Vice President of Engineering at Simpson Strong Tie, related experiences early in her career when she was frequently the only female at job sites: “You show up, and then you feel you have to prove that you’re qualified for the job. I would often be met with looks of surprise when I presented myself as the design engineer, but my male colleagues never seemed to experience that.”

**4 Being “The Only”:** Being the only female can exact a toll that should not be minimized. While a few women we spoke with treated this as a non-issue, most mentioned the downside of being the only women in a department or a meeting. ACCO Brands’ Senior Vice President and General Counsel Pam Schneider told us: “I found that my biggest challenge, in every role I’ve had, has been being the only female executive reporting to the CEO. It made my job much harder.” Selu Gupta, Hardware Engineering Manager at Tektronix (a division of Fortive), who describes herself as “being programmed to be an engineer,” said it is

hard “feeling singled out. In the wrong environment, this can push women away from continuing their career or staying in a very technically oriented field. It does become a burden. But then I realized that this is what I like to do. Why should somebody else tell me what I should be doing?” Being the first woman in any high-profile role can also present challenges. As one executive related, “I was the first female plant manager here, and I needed to overachieve in my role to prove myself.”

**5 Being Heard:** Making sure that women have a seat at the table and their voices are heard are still obstacles that need to be addressed. Sensata’s Jacquie Boyer talks about using humor to call out bad behavior: “We’ve all been in meetings where a woman will have an idea, and the people will just move on. Then a man will have the same idea, maybe worded a little bit differently, and everybody thinks it’s great. This has always fascinated me, so I say, ‘Wait a minute, what just happened here? Stacey just said the same thing. Why is Bob right?’” Having opinions respected is not automatic for women. About one in four women we surveyed said their opinions and expertise were not respected by senior leaders. Similarly, 48% said that their judgement was questioned in their area of expertise.

**6 Discrimination:** Outright discrimination is a problem that 59% of the women who took our survey experienced at work. An additional 11% told us they have witnessed but not experienced discrimination.

One woman told us: “As an individual contributor, working in a predominantly male company, I faced overt discrimination, comments from male coworkers, things about my pregnancy, even having people just make me feel uncomfortable in my day-to-day work. When I moved into management, it became much more subtle. Now I have a seat at the table to some extent, but I might see discrimination through exclusion or that old thing ‘Hey, who’s going to take notes?’ or ‘Why don’t you plan the happy hour?’ and they all kind of look at the woman.”

Another talked about discrimination in promotion decisions: “I was told that I would not advance in the company because they expected me to leave and have children.” Another reported: “When I was up for promotion, I was told that Jeff wouldn’t work for a young woman, so they would need to wait for him to retire before giving me the job.”

## Higher Hurdles

Another early career experience was relayed by the President of Siemens Smart Infrastructure U.S. and CEO of Siemens Industry, Ruth Gratzke: “When I was 27, I had my first big sales call with a large steel customer, working with a local team I had never met before. When I showed up, I could tell the guys on the team were thinking, ‘Who is this chick, and why are they sending her?’ But when we walked out of the customer’s office with an unexpected \$800,000 order, the team’s attitude toward me changed completely. As a female, you can’t make mistakes, and you have to jump 20% higher. But once you have taken that initial hurdle, I think it gets a lot easier because you’re unique and everybody remembers you. Once you have established credibility, it is an advantage.”





**7 Sexual Harassment and Intimidation:** We also heard of examples of sexual harassment and intimidation. “I have been sexually harassed by superiors in the workplace including inappropriate comments made to me directly by the CEO of a manufacturing company prior to the start of a meeting where I was the only female in the room.” We also heard about intimidation, including the observation that “men treat men differently than they treat women, and they feel much more comfortable with putting women in their place, so to speak.”

In the American Association of University Women **study on women in manufacturing**, 83% of women said they had experienced some form of “unwanted touching, kissing, or other physical advances,” and those who experience sexual harassment are more likely to leave their job and the industry as a whole. Clearly, getting more women into manufacturing requires that this problem be addressed.

**8 Bad Recruiting:** Many argue the pipeline of women engineers just isn't full enough. Smith & Wesson's Executive Vice President and CFO Deana McPherson disagreed: “If you recruit in areas where you're comfortable and have the attitude of ‘if you post it, they will come,’ you're not going to get very far.” Selu Gupta of Tektronix added, “It can be as simple as who's recruiting, who's looking out to find engineers for your company. When women in college see women in roles at the company they're planning to interview with or work for, that seems to make

a difference in their employment decisions. I've heard this numerous times because I'm out there recruiting at career fairs, or I am one of the interviewers on a panel. It is very important that women see there is a place for them as a female in the organization.” **McKinsey recently reported** that 20% of automotive companies (a lagging industry in gender parity) are still recruiting in traditional areas and failing as a result. Recruiters need to prospect for women, such as in women's engineering organizations, women's groups at universities, and recommendations from other women.

**9 Unstructured Interviewing:** As a next step, recruiters and anyone involved in the interviewing process need to overcome bias, such as trusting men when they're perceived to be ready for a job, versus expecting women to have a track record of success in the job, a known bias. Julie Freigang, CIO of CF Industries Holdings, said, “I'm a huge champion of behavior-based interviewing as a way of eliminating unconscious bias.” Behavioral interviewing is a structured approach that asks candidates to talk about actual experiences versus hypotheticals. Most small and medium-sized companies are not using behavioral interviewing because of the amount of time and preparation it requires, such as writing questions in advance, ensuring that interviews follow the same question wording and sequence, and having an agreed scoring system. All of these steps make post-interview comparisons easier and reduce unconscious bias.

# The Outsized Role of Networks

Many of those interviewed highly recommended that women build out their networks, and several women credited both men and women in their networks for pivotal advancements in their career.

Southwire's Senior Vice President of Corporate Finance Christy Wright talked about going to night school for her MBA and hearing about job opportunities through that network, concluding: "I think the power of a network is always very strong." Pam Schneider of ACCO Brands described the importance of networking in her career: "I went from place to place based on networking and people that I knew. Opportunities mostly presented themselves to me."

Informal networks around golf or happy hours are often dominated by men, giving women limited access to valuable opportunities to connect professionally outside of the workplace. One woman shared: "I've been told I don't want to be one of the boys, heard crude jokes, and been excluded from some activities because I'm not a man." It's not surprising then that male CEOs on average have **larger networks** than female CEOs.

We also heard about the difficulty of networking. As Simpson Strong Tie's Annie Kao recalls: "Being in

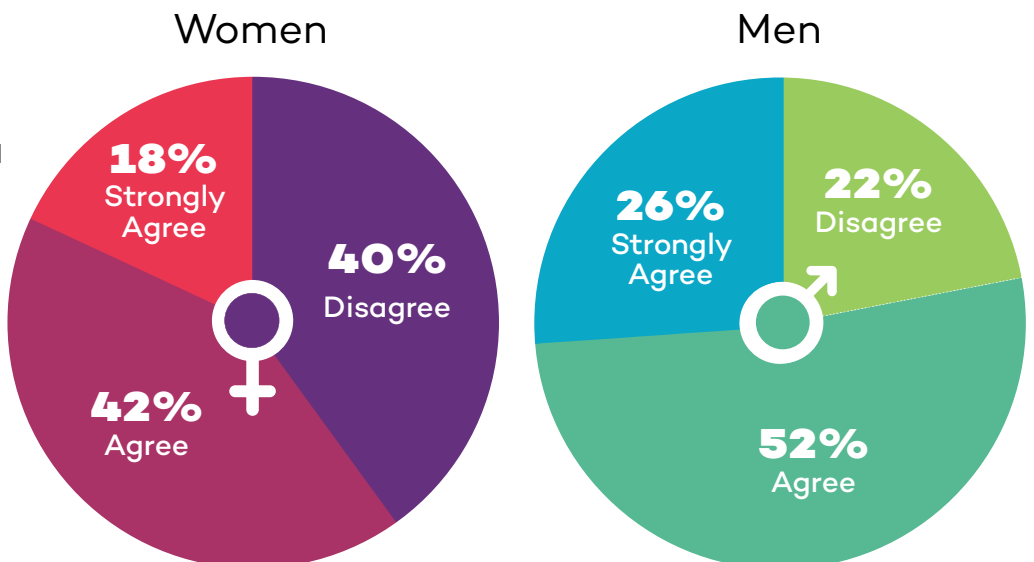
a technical role within the engineering department, I remember wondering how much energy I should be putting into relationship building and networking. Those things have nothing to do with my technical skills or my ability, for example, to point out a problem on a job site. I remember wondering when was I supposed to know that networking was something I should be spending more time on and increasingly realizing how important developing those connections were to my career development."

Networks can also stall progress when women are consciously or unconsciously excluded. We heard about the problem of the "old boys club" in just about every interview. One female executive pointed out the real-world implications: "There still are many manufacturing companies where the customers and markets are good-old-boy networks. If it's relationship-based selling, some customers might be less comfortable with a woman in the role. For example, if you're not willing to do entertainment the way the customers expect it to be done or don't have experience with that, it might hold you back." As another woman told us, "Our sales organization, for example, is still very much an old boys club. I think there have been two female salespeople and they both left in pretty short order."

## Are Women Being Heard?

I feel safe speaking my mind or disagreeing with others during meetings. (Rate your level of agreement)

Source: Manufacturers Alliance survey



## Building Gender Diversity on Boards

Serving on a board of directors is an important growth area for women because of the impact that boards have on CEO selection. Currently, women represent 31% of board of directors in the U.S. across all industries (**23% in U.S. manufacturing**), but the devil is in the details: Women represent **only 6%** of executive director roles (significant decision-making authority) and the remaining women are in non-executive director roles (oversight only).

There is more work to be done amid continuing resistance to bringing in more women, especially through quotas. Stacy Krause, the Senior Vice President and General Counsel at Kadant, has heard concerns about bringing in qualified female board candidates, especially in manufacturing: “However, we have recently brought two highly qualified women to our Board, including one with operational manufacturing experience, by working with a qualified and targeted search firm.”

Erin Kane, President and CEO at AdvanSix, stressed the importance of board diversity for business performance overall: “Participation on Boards allows women in leadership roles to both experience and deliver diversity of thought. Meaningful diversity at all levels is key to strong business outcomes, and gender diversity at the highest levels leads to better decision-making. Our oversight of key management processes like succession planning further helps to ensure the identification, development, and mentorship of top diverse talent is a priority.”

“Studies have shown that you really start to see a difference with improved corporate governance and enhanced board collaboration with greater influence when you have three or more females on your board,” said Mueller Water Products’ Martie Edmunds Zakas, the Executive Vice President and CFO. “I can tell you from personal experience on boards that the dynamics can be really different at that point,” she added.

Manufacturing sector boards tend to be older, white, and male, so a board refresh can make a big difference. As one executive told us, “We have several aged people on our board, and there was a lot of kicking and screaming when I suggested adding women to the Board, including pushback like ‘What if there’s a more qualified man?’ We did achieve more diversity in terms of racial make-up, not gender, but it’s a start. They’re younger, more aware of what’s going on and ask terrific questions. If we hadn’t pushed, we would have kept the old white men as board members. This was a situation where we got the intended outcome as well as a wonderful unintended change.”

Getting more women on boards of directors does not need to be hampered by the shortage of women in the C-Suite, the source for most board choices. There are **compelling arguments** for adding Millennial talent, especially women, because they bring new skills and experience that can help companies innovate their business models based on the mindsets of generations with the most purchasing power.



# Transformational Trends Bode Well

While progress has been slow and obstacles still exist, there are several socioeconomic and technological trends pointing to an acceleration of women's leadership in manufacturing. A few might be called COVID silver linings. For example, while it came at a price, there is far greater awareness about the need for more equitable sharing of household tasks and childcare.

A related topic is working from home. As Quanex Building's Vice President and CHRO Kim Garcia noted: "The pandemic has given us an interesting opportunity in that many more men work from home than before, and they can provide a different level of support there. I expect this dynamic of who has responsibility for what in the household to change, and we will see even more opportunities for women to grow in industries like manufacturing, because their support system may have changed."

The pandemic was also a boon to manufacturing's image. It became a hero sector, capturing headlines with novel approaches to making things in new ways (hand sanitizer, toilet paper, ventilators) and inventing life-saving vaccines in record time using the latest technology. For the first time in decades, the average citizen was waking up to the national security importance of manufacturing, and the talent shortage took on new importance. For skilled job seekers attracted to cutting-edge employment with a purpose — look no further than manufacturing.

Increasingly, those skilled applicants are female. Women are outpacing men in terms of **educational attainment** and have been **for years**. In manufacturing, the trend is measurable. According to Census Bureau **hiring trends data**, women are getting a higher share of skilled jobs in manufacturing. Significantly, between 2003 and 2019, the number of women with college and advanced degrees has been on a **steady rise** making degreed women the largest component of the female manufacturing labor force. Trends for men

during the same period have been roughly flat, with degreed men consistently holding a smaller share than men with some college or high school alone.

Plenty more of those skilled applicants are needed, regardless of gender, but women have a lot to offer the world of advanced manufacturing. Digitalization requires an infusion of new skills into the manufacturing talent pool including advanced analytics, problem solving, gamification, and virtualization. Collaborating, dealing with ambiguity, and team-building skills are taking on **more importance** every day in manufacturing, as companies bring IT and OT together as part of the digital modernization process.

Digitalization provides opportunity and sizzle in manufacturing that can help attract women to the field. Andrea White, Vice President of Global Human Resources at Sonoco Products, pointed to the connection between talent retention, flexibility, and digitalization, "The need for flexibility has forced companies to do things differently if they want to retain top talent. But new options become possible because of digital technologies, which you are going to have to embrace to compete."

## Attracting Women to the Digital Factory

As Southwire's Christy Wright put it, "In our plants, we're investing in connected factory. We're also investing in new material handling technology, which means team members don't need to be able to lift heavy items. We're being deliberate about flexible scheduling. We're not where we want to be, but we have a path for it, and it's something that we're striving very much towards."



Sonoco Products' Andrea White attributes the speed of the change to the pandemic: "We were headed in that direction, but COVID really spurred it on, and I don't think it's necessarily a bad thing." The increase in remote commissioning, diagnostics, and maintenance are examples of pre-pandemic digitalization trends adding flexibility and appeal to manufacturing jobs.

Digital technologies are making manufacturing careers more attractive and accessible to women across the board. Julie Freigang of CF Industries Holdings told us, "What makes me hopeful is the ubiquitous technology in manufacturing companies and jobs like big data and analytics. Businesses won't be able to function without those jobs in the future. That makes me hopeful for women."

As Sensata's Jacquie Boyer told us, "I'm encouraging my 18-year-old daughter to get engineering and business degrees because they provide a disciplined way of thinking. In manufacturing, as a woman, if you have these degrees, you can do whatever you want. It is a license to move and allows you to create your own trajectory," she said.

Another transformational trend of the past few years is the increased emphasis on ESG, especially at the behest of corporate investors, and its impact on board diversity. Meenal Sethna,

Executive Vice President and CFO at Littelfuse and an independent director of SPX Technologies, observed that with heightened emphasis on diversity, "There's increased focus by boards on certain experiences and skill sets that are needed, which boards are working much harder to get." Investors now expect to see a skills matrix, so "how do you make sure you're broadening your board membership so that you're covering all the skills you need? Through diversity, including gender and race – which in turn leads to much better dialogue and differences of opinion, especially since boards are grappling with so many more challenging topics today, including societal." Ultimately such diversity becomes more important for the success of the board on behalf of the company.

When we asked what made them hopeful about getting more women into leadership roles, many women talked about the new levels of empowerment shown by the post-Baby Boom generations. "I see so much more confidence in our young women," said Kim Garcia of Quanex Building. There was universal agreement that the generational change will be significant in manufacturing because of people growing up with powerful technologies in their hands and all around them, being raised by two-career couples, and having different expectations of their partners, employers, and society as a whole.

# Manufacturing – Why They Come and Why They Stay

In the finance, human resources, legal, marketing, sales, and sustainability functions of manufacturing, women tend to have higher representation than in operational and engineering roles. That is not surprising since front office functions are transferrable across industries, and women are already better represented there across the economy. For example, women represent **38% of lawyers**, 72% of HR managers, and **60% of accountants** and auditors.

Most women in manufacturing arrive by happenstance rather than by design. From a woman who just marked her tenth year in manufacturing and wants to stay, we heard: “I had no idea what I wanted to do, so I thought I’d spend a couple of years here and then go on to the next thing.” Andrea White of Sonoco Products, who was drawn to engineering because of her skill in math and science, made a similar observation: “I really didn’t know what careers were out there, to be honest with you. I saw teachers, doctors, people working in some businesses around town. But that’s the extent that I knew.”

At the same time, we also heard about moments of epiphany: “Everyone in my family was in manufacturing. When I came to the industry, I remember thinking ‘these people make sense. I like those people,’” Smith & Wesson’s Deana McPherson said. An accidental arrival in manufacturing is surprisingly common for women, with **73% of women** working in the sector saying they entered the industry unintentionally. For manufacturers this is low-hanging fruit: **A little targeted recruiting in high schools, colleges, and trade schools, could go a long way.**

For the 27% of women who do seek out manufacturing careers, what is the key attraction? We heard things like: “I think I was born to be an engineer. I just love to figure out how things work,” (Selu Gupta, Tektronix) and “My dad is a civil engineer...I really wanted to follow his footsteps and go into engineering,” (Annie Kao, Simpson Strong Tie).



# 66%

of survey respondents said DEI initiatives are somewhat or very important to their decision about where to work

Source: Manufacturers Alliance survey

They told us about being good at science and math from an early age and not wanting to go into the family business (farming, dairy, construction), or they were focused on careers with stability and good pay.

Once women are in the manufacturing sector, what makes them stay? A common thread was loving the challenge of figuring things out as well as job variety. We heard multiple stories of crossing over into temporary and even permanent assignments distinct from their degreed fields. Sonoco Products’ Andrea White, who has enjoyed stints in engineering, HR, IT, and operations, observed, “I think it’s just being open minded to opportunities put in front of you, and if you’ve got a practical spin to put on it and apply it to the manufacturing realm, I think you can do that in any function, which is essentially what we did.” Lincoln Electric’s Michele Kuhrt held senior roles in finance prior to serving as CIO and then Chief Human Resources Officer. What connects these disparate roles is her ability to find solutions to difficult problems and thereby earn trust. Her boss paid her the ultimate compliment: “No matter what problem we put in front of you, I know you will be able to solve it,” Kuhrt related.





## Success Strategies for Individuals – Advice from Women Leaders

There is no cut-and-paste career path for successful women in manufacturing, but there are must-have ingredients based on the interviews we conducted. These strategies can be replicated across all functions and industries and can be adjusted to fit all phases of a woman's career.

### Make Lateral Moves But Make Them Strategic

Several women talked about the strategic value of stepping laterally to build scope of experience. Michele Kuhrt of Lincoln Electric spoke about it from the CHRO perspective, including the pushback she hears. “I tell both men and women, we need them to make this lateral move, but not to worry. You’ll be there for two or three years and then we’ll move you to another role.”

Christy Wright of Southwire mentioned taking on the role of business unit VP of Finance, a lateral move that “was really the pivot for me.” After a second lateral move to lead finance across combined business units, she was promoted to Senior Vice President and now leads corporate tax, treasury, accounting, financial shared services, and real estate for the entire company.

Elizabeth Hoegeman of Cummins talked about the importance of having a broad base of experience, a side benefit of lateral moves. “I’ve worked in multiple functions, business units, and disciplines within manufacturing such as manufacturing, operations, engineering, continuous improvement, purchasing, and quality. Having that breadth in your career is important,” Hoegeman said. “For women who might just be starting a family, this approach also allows them to choose roles that fit within their stage of life, because clearly there are roles that are much more flexible than others,” she continued. “And when

you get to the other end of your career, if you have a strong base of experience, you have the best opportunities to grow.”

When that base of experience includes P&L responsibility, it is even more compelling. Siemens’ Ruth Gratzke told us: “Running a small, \$15 or \$20 million P&L when I was in my twenties taught me to pay attention to details, manage budgets, control expenses, etc. — a great training ground. I also had early experiences designing, quoting, negotiating, and then managing large-scale industrial projects from A to Z, which taught me how to structure complex tasks, break them into smaller pieces and make them executable. And I would say both experiences, in combination, served me extremely well.”

The importance and utility of lateral moves can’t be overstated, but choose them carefully. Find the right balance between gaining experience that will be valuable in the future versus being stalled. Studies show that women leaders are tested more often than their male counterparts. “He can grow into the job, but she hasn’t proven herself,” sums up the faulty logic, as one woman put it. Statistically, among women who reach the level of CEO across all industries, many gained a competitive edge by changing roles and functions more often. It is impossible to know if they became more qualified or were simply tested more. Being laser focused on making lateral moves strategic and fitting them into a larger career progression plan are key.

## Ask Questions and Learn All Aspects of the Business

Lincoln Electric's Michele Kuhrt said: "I tell everybody, just because you work in legal, HR, or whatever it is, you've got to be curious about the business. What do we make? Why do we make it? How do we sell it? What I have found most interesting is that a lot of people, including leaders, actually learn themselves by answering these questions. Then there's a symbiotic cycle of learning between two individuals." Jennifer Parvin, Chief Marketing Officer at Batesville, walks the plant floor about once per quarter. "It is important that you understand all parts of the work that's getting done, particularly on the shop floor. And so no matter where you sit in the organization, make sure that you take time to go back and understand the folks that are making your product," she said.

One health and safety executive from a multinational manufacturer talked about the importance of having an operations mindset: "Spending time in our facilities has made me better at my job. When people coming up in my function ask me for advice, I tell them, 'Go to every facility, get to know the people, know the process, know the product, know what's going on.' So, when you're in a conference room with all those office people who are talking about something in the factory, you're the one person in the room who has actually been to the factory and knows how things work there. Be that person, because that's a value that you bring other than just your functional hat."

The deeper your understanding of the business, the better. Emily Poladian, the President of Bridgestone Mobility Solutions, Americas Sales & Customer Success, talks about the unwritten rules: "Every business has a language and a rule book, it's just not written down. Understand those so that you know how the game is played, and you can jump in and play it."

## Learn the Business by Swimming in Other Lanes

Andrea White of Sonoco Products used her Textile Engineering degree to become the first reliability engineer at Sonoco. "I was working with about 80 maintenance guys day in and day out." Success in this role catapulted her to leadership of global maintenance excellence, putting processes into practice around the world and leading the Sonoco Performance Systems (SPS) function. Her focus on continuous improvement in skills and training prompted her to raise her hand when a position in HR Organizational Development opened up. She took it on as an additional hat, still leading SPS. Fast forward a decade or so and White has added more hats, serving as CIO and Head of Automation. "I totally believe in not holding yourself back to opportunities that might be way outside of your swim lane," White said. "Never say never to opportunities. You will learn something at every step along the way, and you can apply leadership skills to any role," she added.

## Ask for an Executive Coach

"A lot of us do not become self-aware until we are older. You are who you are, and you can't change that, but you can change certain behaviors," Irina Feldman of The Heico Companies, explained. Working with an executive coach is valuable "because it's easier to hear the truth about yourself from a neutral person versus from your own boss," Feldman said. Elizabeth Hoegeman of Cummins sees the value for women leaders as well: "Strong coaching and mentorship have been key throughout my career. It's good to have had champions that truly cared about you, the career opportunities you have, and the career choices you make."

## Grow Your Network through Mentors, Advocates, and Sponsors

Many of the women leaders spoke about the importance of finding a mentor. “The fact that someone in the organization was willing to reach in and bring me along,” observed Batesville’s Jennifer Parvin, “and to encourage me to continue to stretch and learn and understand how things were evolving or changing in the world and in the industry, that was important for my growth. My mentors were able to help me chart my course and were there for me for my questions and candid conversations.” As Kim Fuqua, Plant Manager, Kimball International, Inc. put it, “Early in my career managers saw my potential even before I saw it. And now, as a leader, I stress to my managers the importance of seeing that potential in others, finding the ones with promise, giving them confidence, and pulling them through.”

Also, you don’t need to be an “old boy” to have a great network. Women’s ERGs, professional societies, and grad school connections are great places to start. As Elizabeth Hoegeman of Cummins put it, “The fact is, you need to make sure leaders know who you are. That’s never changed. Networking is the key. In my role, if I don’t know you exist, I cannot tap you on the shoulder.” Don’t be afraid to reach out to women in leadership. “I am convinced that women hire women,” Siemens’ Ruth Gratzke told us, and studies show there is a connection. According to [research by Payscale](#), individuals are more likely to get promoted by a person of the same gender.

Several women talked about the importance of having advocates — both male and female — who will be a voice at the table for you and position you for your next role. Emily Pajek of Lincoln Electric advises getting an advocate as a first step because they were so pivotal for her career:

“You don’t even know what you’re capable of sometimes,” Pajek said. Selu Gupta of Tektronix shared: “I’ve had male allies and mentors who have found ways to help me understand what I need to do to be there or said my name in a room where I wasn’t present to give me that opportunity. We need to encourage that and help each other at all levels, not based on gender, but based on talent and skill. More of that just needs to happen.”

Lincoln Electric’s Emily Pajek told us: “I had been in EHS for eight years, and I became friends with one of the maintenance managers because we were on a special project together. He encouraged me to move over to maintenance because I was a good problem solver. At this point there were no women in maintenance, and I didn’t know how to fix anything. But this person was like, ‘Yeah, I think you’d be good.’ So then I went into maintenance and ended up managing mechanics and machinists for eight years before moving into production.” Pajek credits that encouragement and advocacy for her career transformation. “If I hadn’t had that one person tell me, ‘I think you can do it. You’ll be fine,’ I never would have thought of it,” she said.

Sponsors are a significant part of the promotion equation. Whereas mentors provide career guidance, sponsors leverage the power of their own network to unlock doors by actively elevating their protégé’s visibility, making sure she gets credit for her contributions, and ultimately placing her in new roles. Betty Ungerman — who wears many legal hats at Lennox International, including Deputy General Counsel, ESG leader, and Chief Ethics & Compliance Officer — told us, “My boss has been a big sponsor for me and a key to my success. People on each side of the equation need to understand what a sponsor does and the responsibilities on the one seeking sponsorship.”



74%

of manufacturers  
don't believe their  
company has a fair  
number of women  
in leadership roles  
compared to men

Source: Manufacturers  
Alliance survey

## Speak Up About What You Need and Find an Employer Who Will Provide It

Many women we interviewed mentioned the importance of being their own advocate and communicating what they need. Work-life balance, career progression, work from home, travel, and burnout are all topics that came up frequently. Batesville's Jenn Parvin talked about combining the roles of mom and executive by "setting clear expectations" with her employer about work-life balance and "making sure that I work for a company that aligns with my values." Sometimes, it is necessary to push back. As Erin Kane of AdvanSix put it: "Earlier in my career, I found that I was under pressure to make sacrifices as a working mother for my career – but I also learned that I could choose to push back, make decisions without apologies, and to ensure that even the highest level executives saw me as a human being and a person."

Another woman told us about her desire to progress from director to vice president. After chronicling her credentials including redesigning and leading her function and effectively being her own boss for seven years, the promotion finally came. "To his

credit, my boss actually got me the promotion, but had I not gone to bat as my own advocate, if I hadn't been bold enough to say something, I would still be a director today," she said.

Women are speaking up more frequently about where they want to work (fully remote, hybrid, onsite) and how much they're willing to travel. Opening up about burnout is becoming more commonplace as well, especially in the post-pandemic workplace where burnout has become an epidemic of its own. "A couple of years ago, I had three jobs. And I finally decided to complain, and they took one of them away," said a health and safety executive from a multinational manufacturer.

We noticed that Baby Boomer women struggled a bit more with saying "no" to excessive employer expectations than do their daughters following similar career paths. "My daughter definitely has an 'off' button," one woman told us. Another woman, referring to her Millennial sons and daughter said: "Their expectations about equality, about what they want out of their partner in life, about how they look at their colleagues at work, are very different. They don't want to be in a top down, command-and-control environment."

## Flexibility On Their Own Terms

When flexibility is lacking in manufacturing, women find success elsewhere. A great example is the experience of CF Industries' Julie Freigang, who started as a mechanical engineer in the automotive space before moving into IT. She wrote software for global manufacturing companies, helping them get ready for ISO 9000 and QS 9000 certifications. "I was writing and installing software and seeing the inside of many manufacturing companies all over the world. When automotive companies adopted QS 9000, nobody knew what that was, so my employer at the time asked me to take on that responsibility."

The software took off and Freigang decided to found her own company. "That was about time for me to start a family, so it worked really well. I launched the business within months of my daughter being born. Having my own company gave me the flexibility to continue to work really hard, but on my own terms, while I had my kids. I sold the business to a bigger software company right before the dot-com bubble burst." Afterwards, Freigang went back into manufacturing.

## Get Support at Home

According to a female CEO study by Korn Ferry, half of all women CEOs said they had a **partner at home** who was supportive of their career. About one-third of women CEO partners took on primary responsibility for the home and childcare. Among the women manufacturing leaders we spoke to, about half mentioned substantial support from their partners at home including childcare, managing the household, moving, changing jobs, and downshifting their own careers.

Cummins' Elizabeth Hoegeman and her spouse divided the responsibilities into shifts: "I used to get to work by 6:00 in the morning and was home by 3:30 in the afternoon, so my husband did the breakfast shift, and I met the kids when they got off of the bus. It's about making the choices that work for you."

Deana McPherson of Smith & Wesson concurred: "I can tell you, I could not do what I did without my husband. He went part time. He got our daughter to her orthodontist appointments. He did the things that a stay-at-home mom might have to do if her husband was the CEO."

Julie Freigang of CF Industries also talks about choices and positioning career decisions as a "package deal" with her family. Sacrificing in one area might be balanced out by taking nicer vacations or having housekeeper help. "Seeing my daughter as a female engineer in the automotive industry and a working mom herself, making the same choices that I did, tells me the package deal was worth it," Freigang said.



## Find Your Authentic Voice

Probably the largest area of disagreement among the interviews we conducted surrounded the question of female identity. At the risk of massive oversimplification, it boiled down to: "Don't be too masculine!" "Don't be too feminine!" "Just be human!" If there was any doubt that women are still walking the tightrope, our interviews confirmed it. (Tightrope bias is defined as behavior that rewards the dominant group, such as white men, for being authoritative and ambitious but penalizes everyone else.) Perhaps the best advice centered around authenticity. "If I could say one thing to women, it's this: You have to find your voice, and whatever way you do it, it needs to be really authentic to you," said Jacquie Boyer of Sensata. Similar sentiments came from Siemens' Ruth Gratzke: "It took me a couple years to trust myself as a female versus trying to imitate men or manage in a way that just wasn't my own." Emily Pajek of Lincoln Electric calls it "being true to you." When women try to be more domineering or match male behavior, it's a huge mistake. "Be who you are, and people will authentically appreciate that. I'm a woman, I'm a mom. Some of my employees even call me mom, and I find that very affectionate because they're right — I'm strict, but I'm loving, and I care about them. Just be who you are."

The thread running through so much of the advice we heard can be summed up in a single word: intentionality. "Don't let your career just happen to you," Emily Poladian of Bridgestone advised. Intentionality applies to timing assignments, choosing roles that give your career greater scope, finding advocates, and spending time to think about your authentic voice and personal brand. Intentionality also applies to choosing to be flexible. Pam Schneider of ACCO Brands stressed how personal the decision to make sacrifices must be. "I made sacrifices. I think as I grew older and my kids grew up, I was better able to know what I was willing to miss and what I wasn't willing to miss. You know, I think the biggest thing I tell young women coming up is that these are all personal choices. And there's no right choice or no wrong choice."

# Success Strategies for Companies – Expand on Lessons Learned

Getting more women into manufacturing leadership roles is not inevitable, nor will it happen on its own. Progress requires prioritizing the advancement of women, tracking progress, and holding managers accountable. So many of these recommendations are good for all employees, regardless of gender or background, and as the concepts of universal design have already proven for decades, designing for one group often helps all groups.

## Benchmark Your Organization on Flexibility and Paid FMLA

Your competitors may have adopted innovative work-from-home and other flexibility options or increased paid leave time for caregivers. Policies are changing quickly.

As one woman leader noted, “I know we lost women as a result of not being flexible. There was a woman on my team that left after she came back from maternity leave because we wanted her to be in office full time. With the cost of daycare, it was not financially feasible for her to be in office full time, and because we didn’t offer that flexibility, like a hybrid model, she left.” Consider whether you want to be a follower or a leader before your retention numbers tank.

## Be Intentional about Recruiting and Interviewing

Waiting for women to come to you doesn’t work. Target women’s professional societies and academic groups. Train teams on behavioral interviews. Measure your progress on a dashboard and hold managers accountable. If you have input on Board membership, challenge the conventional wisdom and encourage prospecting for women, including those who haven’t yet reached the C-Suite.

## Improve and Expand Job Rotation Programs

For entry-level employees, many manufacturing companies offer job rotation programs. While they excel at attracting diverse talent including

women, they often fail at keeping that talent due to poor program management. “People come, get some experience, and then leave, taking all of that institutional knowledge with them. No one knows who to go to for things because we’re having such high turnover,” one woman shared. Make sure these early career employees have a clear and consistent path with guidelines for how to get from A to B in their careers. For mid-level employees, job rotation programs can be an opportunity to build scope into their skill set by expanding their experience. Rotations can also reduce unconscious bias about whether Jim or Jane should be next in line for VP.

## Update Your Mentoring Program and Assign Sponsors

The vast majority of women we surveyed aspire to higher roles and feel qualified to take the next step in their careers, but 33% say they do not have colleagues advocating for them, and 59% said they lack mentoring and resources for career growth. Selu Gupta of Tektronix sees this as a strategic move for companies: “Mentorships are something that are really needed if we are looking to really increase the numbers of women in manufacturing companies.”

To this end, manufacturers should expand and improve their mentoring programs, being intentional about their impact on women. Gather data about program effectiveness and have an agile development mindset to make improvements quickly. Mentors and sponsors play distinctly different roles. Assign an executive sponsor based on that individual’s network strength as well as their ability to impact pay and promotion decisions for their protégé.

## Audit and Build Female Bench Strength

Build your bench of female talent at every turn, making sure to recognize and call out unconscious bias, competency bias, or tightrope bias so that outdated individual (and societal) mindsets aren't decimating your female leadership ranks. Include women on succession plans as part of a formal succession planning process and hold managers accountable. Build this into **strategic workforce planning** by identifying the roles with the most impact on overall company performance and recruiting strategically for those roles.

## Be Transparent about Career Ladders, Job Descriptions, and Salary Bands

Show employees how to get from position A to B with objective descriptions of the steps involved. These provide a useful blueprint for all employees, especially for women and their advocates, to strategize about next career steps. They also take the emotion and subjectivity out of conversations related to ambition — again, the tightrope — giving women the vocabulary to talk about career goals through an objective framework.

## Make Intimidation, Harassment, and Discrimination Zero Tolerance Zones

Don't treat these matters as Legal and HR topics. Make it about corporate culture and grant them the same reverence and passion given to safety programs and see what happens. Make sure managers participate in training designed specifically for them, so they have tools to take action. Make sure everyone understands what it feels like to be "the only."

## Consider Incentives and Data Transparency

Measure and hold managers accountable for progress on a gender equity dashboard. Some manufacturers already link incentive compensation to those same metrics. Leading companies track

**“Women require and desire flexibility to manage the pace and trajectory of their careers. Traditional career ladders and development models tend to lose track of women in the time spans where they flex, nor do they observe the experiential learning outside the four walls of a given company.”**

— Erin Kane, AdvanSix

not only *outcome* metrics (number of women, for example) but also *process* metrics (such as problems in recruitment). Some publish top-level data as part of their DEI and ESG reports. The notion that publishing diversity information is too much of a legal risk is giving way to realization that **silence may pose risks** as well.

## Get Leadership on Board

The unconscious bias that can occur in an organization when someone is different doesn't happen on purpose — and in fact, because it's unconscious, it won't easily go away on its own. When leaders resistant to change happen to sit in the C-Suite, it's more difficult, but not impossible, to make progress. One woman shared: “There's a group of us in the C-Suite trying to figure out where the boundaries are and how far to push. But changing the way the team functions ultimately requires the leader to want to change things, regardless of the appetite within the team for things to be different.” Progress may take time but don't give up trying. We heard about happy endings in the Board refresh process and some surprising results won through diversity training: “One of the most incredible things is seeing the people that — when you give them a chance — are willing to change.”



## Pulse Check on Employee Growth

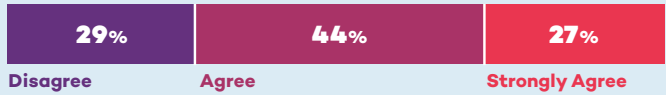
Rate your level of agreement with the following statements regarding your career journey.



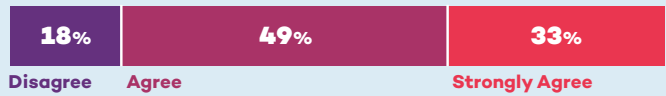
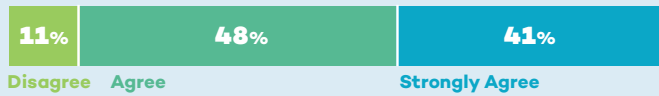
**Men**

I aspire to be a higher leadership role in industry.

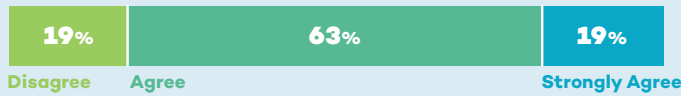
**Women**



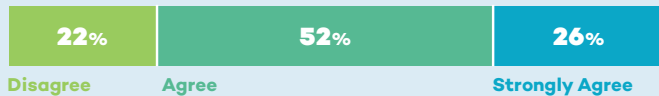
I believe I have all the qualification I need to take on the next step in my career.



I have enough mentoring and resources available for my career growth.



My company promotions are not biased by gender/sex.



Source: Manufacturers Alliance survey





## Conclusion

This is a time of incredible investment and advancement in U.S. manufacturing and, considering the current and future challenges in recruiting enough talent within the sector, manufacturing needs women. Through our interviews and survey, we tapped into a valuable knowledge base grounded in real-life experiences providing practical, actionable, and proven approaches to succeeding in manufacturing. Perhaps most important of all, we encountered incredible hope and optimism – optimism informed by facts on the ground as seen through the lens of different generations, functions, and industries. One female executive captured the essence: “Change is happening, and it’s interesting to watch. It’s infuriating to watch. It’s joyful to watch. It’s all of those things.”

Women in advanced leadership roles are impressed with the confidence of their younger counterparts. “Younger women are finding their voice much earlier,” Lennox’s Betty Ungerman noted, citing this as a hopeful sign. For any woman in manufacturing who still struggles with imposter syndrome, Bridgestone’s Emily Poladian has a great piece of advice: “When you get a seat at the table, whether it’s a temporary assignment or a permanent role, always remember you’ve earned it just like every man at that table. So, own it just like all of those men do, because you won’t see them being shy about it.”

Many of our recommendations are good for men and women because they’re simply good business

practices. Siemens’ Ruth Gratzke talked about the competitive advantage in finding the right balance: “Reflecting on this technology evolution that we’re all experiencing, such as artificial intelligence and all of the new innovative software solutions coming online, I think it levels the playing field. It’s a massive opportunity, but we will not be able to perform unless we find a way to engage all genders effectively. So I think at the end of the day, the company that manages to attract both, and manages that tension in a healthy way, ultimately is the one that wins.”

“Our whole world economy is centered around technology. If we look at the advances that have been made, they wouldn’t have been possible without advanced engineering and advanced manufacturing. For women not to be a part of this technological development would be a miss for manufacturing and a miss for society.”

– Selu Gupta, Tektronix

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