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Center for Industrial Services  
INSTITUTE *for* PUBLIC SERVICE

# How Manufacturers Can Expand Their Talent Pipeline

Strategies for broadening your horizons to reach a wider pool of skilled prospects

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# INTRODUCTION

The manufacturing workforce dynamic has never been more challenging. Baby Boomers are aging out and many younger people are unaware of what modern manufacturing is, let alone what to expect on the job in terms of duties, skill sets, and work environments. This means you have to be more strategic than ever about meeting your workforce needs. Essentially, you must expand your horizons before you can expand your pipeline of prospects.

In this white paper, we will outline:

- **Changes to make as you “go to market” for prospects:** How are you selling the job? What makes a good fit and which prospects are you excluding from the process?
- **Where to look for prospects:** While many manufacturers rely on familiar sources for top talent, the truth is that untapped potential exists everywhere. It's not about where you find your prospects, but rather the hidden skills and abilities they bring to the job.
- **What makes someone a prospect:** It's about skills and your ability to develop talent, not just experience and background.
- **Building a better workplace culture:** Flexible scheduling is proving to be a recruiting tool for manufacturers.

Expanding your prospect pipeline does not equate to lowering your standards for hiring. As you expand your pool, you need to look at things differently, which means success will come in different ways, from different places, with different people. This will also set you apart in the community, establishing your company as a potential employer for everyone.





## Data Supports Need to Evolve Workforce Recruitment Strategies

The Manufacturing Institute and Deloitte have been tracking the manufacturing workforce demand for more than a dozen years. Their [most recent report](#) from 2024 includes these takeaways:

- The U.S. manufacturing industry could see a net need for as many as 3.8 million jobs between 2024 and 2033, as significant investment continues to drive growth.
- Without significant changes, about half of these jobs could go unfilled if workforce challenges are not addressed.
- Investments in skills and strategies that address the workforce's evolving expectations, including flexibility and technology, could be pivotal to how manufacturers position themselves for success.

The report identified three key areas for small and medium-sized manufacturers to focus on:

- **Highest demand production roles:** The fastest growing jobs are likely to be those that require higher-level skill sets such as semiconductor processing technicians, machinists, first-line supervisors, welders, and electronics and electromechanical assemblers. **Digital skills:** In the past five years, there has been a
- 75 percent increase in demand for simulation and simulation software skills, sought mostly for technology-enabled production or testing roles. Roles like statisticians, data scientists, engineers, logisticians, computer and information systems managers, software developers, and industrial maintenance technicians are likely to grow at a fast pace.
- **Flexibility is key to retention:** Manufacturers are also creating strategies to increase existing employee retention. Nearly half (47 percent) of respondents indicated that flexible work arrangements (including flexible shifts, shift swapping, and split shifts) are most impactful for retaining employees.



# CHAPTER 1

## Create Demand With Specialty Skills Training and Apprenticeships

A metals manufacturer in Montana was challenged to recruit welders, so the company created an in-house welding academy for entry-level positions. They trained people for their own operation, but they also trained welders for other manufacturers in the region. The investment involved a calculated risk. The company was subsidizing training for welders they may never hire, but they established themselves as the authority for welding in the local industrial community and made connections with stakeholders in the region.

You could use this same concept, but reach out to nearby high schools or trade schools to collaborate and offer space, equipment, or technical expertise they may lack. It's good to have trainees within your facility, learning key skills while being exposed to your operation. If success means you end up with more students than you hire, it is well worth the investment.

### Recruit Based on the Skills You Need for High-Demand Jobs

Just as you can forecast demand in your supply chain, you can forecast demand for your workforce. You can predict what skills you will need to hire, and start your recruitment effort from there. You should strive to attract prospects based on abilities and competencies, not just using job titles.

One example is for industrial technicians and repair, which is in high demand as manufacturers continue to adopt automation, cobots, and robotic solutions for conveying, material handling, and inventory controls. [Technician jobs](#) attract people with a natural curiosity and aptitude for working with machines, but the role also relies on the ability to interpret data, manage resources, troubleshoot, and communicate. Given the high demand for this job, you might consider if you can grow your pool of prospects with terms such as automation, robotics, or mechatronics.





## Registered Apprenticeship Programs Are Growing in Popularity

For decades, apprenticeship programs have followed a similar core model — an entry-level paid job at a manufacturer with on-the-job training and workplace mentors, coupled with classroom learning at a community college or technical school. The model has been a win-win for employers and employees, with apprentices having higher retention rates as they develop skills and achieve technical credentials. People who complete apprenticeships earn about **\$300,000 more in earnings** in the course of their careers.

Despite its proven ROI, the apprenticeship concept did not grow much until the pandemic. Some manufacturers have been hesitant to invest in workers who had more transferrable skills that enabled them to more easily change jobs. Some workers did not want to commit to one-to-four years of part-time classroom work on top of their full-time job and other personal commitments.

But in recent years apprenticeships have seen significant growth, especially in **Registered Apprenticeship Programs** (RAPs) that address a specific need in a region. A RAP is validated by the Department of Labor or a state apprenticeship agency and often includes government funding. RAPs leverage the strengths of multiple sponsoring organizations to design and execute a customized program for a specific need, such as semiconductor technicians or welders. About 93 percent of workers who complete RAPs gain employment and earn an annual, average starting wage of \$77,000, according to the Department of Labor.

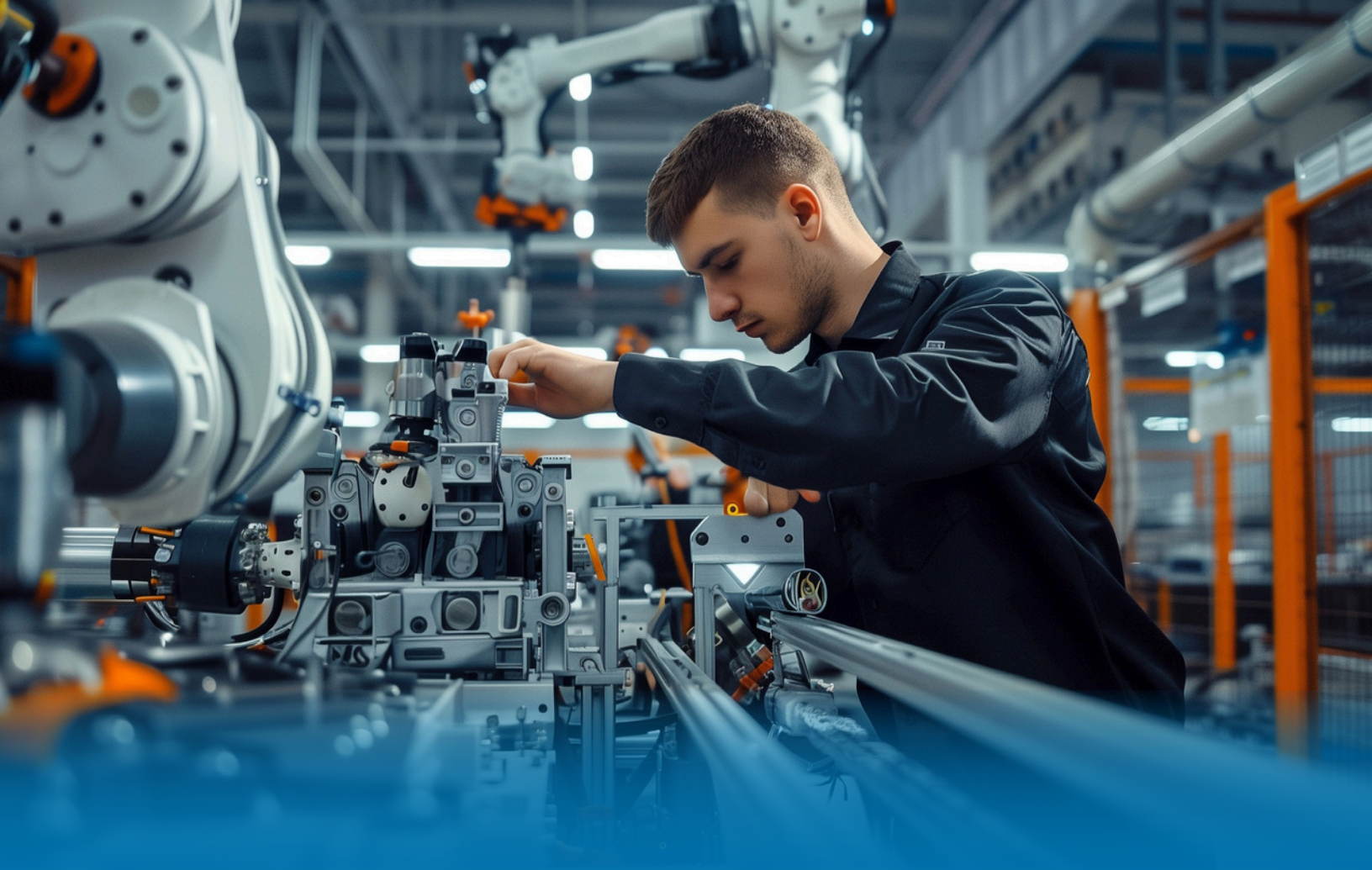
Unlike traditional apprenticeships, RAPs address specific regional workforce needs through a customized, government-backed structure, which ensures high employment rates and strong starting wages.

## Flexible, Competency-Based Apprenticeships Are Increasing

Apprenticeships that offer more flexible, competency-based formats are also on the rise. These programs leverage on-demand e-learning and competency testing instead of classrooms and written tests.

These types of apprenticeships provide greater access to potential participants while meeting demand for “learn while you earn” and a clear path to career advancement. These programs could be particularly impactful as a career pathway to higher-skilled positions for populations for whom traditional classroom training programs may pose attendance difficulties due to lack of transportation and inflexible time constraints. For example, a young parent might previously have had to deal with childcare issues not only for a fulltime job but also to accommodate evening classes at a local community college. Now she or he could do the curriculum at home whenever it is convenient, such as nights and weekends.





## Oklahoma Manufacturing Alliance's Custom RAP Gains Traction

The Oklahoma Manufacturing Alliance (OMA), part of the MEP National Network™, has developed a Registered Apprenticeship Program (RAP) that can be customized to meet the specific workforce skill needs of small manufacturers. Sharon Harrison, OMA's vice president of workforce development, has expertise in guiding companies through the design and implementation of these customized training programs and is sometimes able to secure federal grants to offset a portion of the cost to develop the plan. A typical program involves about four apprentices, drawn from a pool of young people, as well as seasoned workers.

A sampling of OMA clients that have recently used a custom-designed RAP:

- Stroud Safety, which makes equipment for professional drag racing and the industrial workplace, including drag racing parachutes, fire extinguishing systems, safety restraints, and driver apparel.
- Generation FSH, a precision welding fabricator in the metals manufacturing sector.
- KECO Manufacturing, a contract manufacturer of body repair products, specializing in glue pull repair (GPR) tools. KECO's RAP was specifically for machine maintenance technicians, a difficult position to fill.
- Progressive Stamping, a commercial grade stamping and fabrication supplier to the construction, air conditioning, and automotive industries.

These apprenticeships improve the skills of employees and make their companies more appealing to potential recruits.

## CHAPTER 2

### Broaden Your Labor Pool to Attract More Prospects

The good news for the manufacturing industry is recent efforts to solve workforce issues by increasing pay are starting to have an impact. The sector has a lower “quit rate” than several industries that it competes with for new employees, especially food service and retail, according to the [U.S. Chamber of Commerce](#).

But the increased pay has not solved workforce shortages, and competition for skilled workers has become more intense. This dynamic reinforces the need for manufacturers to be more strategic in expanding their pool of prospects.

One of the most powerful ways to expand your talent pool is to consider non-traditional prospects. Historically, many companies looked for reasons not to consider people with disabilities or non-violent criminal convictions. Do not overlook the importance of internal changes you may need to make to accommodate non-traditional hires. There are assessments available to gauge your readiness to accept non-traditional employees and help you create a customized response plan. For example, bringing in previously incarcerated people could create anxiety among your staff, so you might consider your communications strategy and related plan. Hiring people with autism may require a culture change in how your team communicates with and trains new hires that are neurodivergent.







Here are some non-traditional populations to consider.

## Veterans

Exiting military members remain attractive job prospects. More than a dozen states are home to organizations working with the Department of Defense Skillbridge program to match soon-to-retire military personnel with manufacturing job opportunities.

## People Facing Barriers to Employment

Many qualified prospects are limited by transportation options, their children's school schedules, and daycare needs. Can you accommodate them with flexible scheduling or support for transportation? There may be additional support services available through local workforce entities and community nonprofit organizations.

Be proactive to learn more. Your employees will have insights and suggestions. Talk through these issues with candidates and prospects. A common theme in this area is not making assumptions. Solutions may come from surprising sources.

## Uniquely-Abled People

A CNC machining company in Massachusetts has had success in hiring people on the Autism spectrum. People who are on the autism spectrum excel at focused, detail-oriented work and have outstanding technical skills. It's also good for business.

Companies that include people with disabilities reported a [90 percent increase in retention](#) of valued employees and a 72 percent increase in employee productivity, according to the state of Connecticut's Department of Aging and Disability Services. People notice when you are a caring company.

A metal manufacturing client is working with the Massachusetts Department of Public Health and Human Services (DPHHS) to explore how to attract neurodivergent employees. DPHHS conducted a site visit to help the company identify workplace accommodations for neurodivergent employees.

Many high-tech manufacturing roles now involve working with sophisticated machinery through human-machine interfaces (HMIs), minimizing the impact of physical limitations. This shift in job requirements allows manufacturers to tap into a wider pool of talent by considering uniquely-abled individuals.

## Second Chance/Reentry

Many states are now offering credentialed manufacturing skills training to incarcerated people as they prepare for reentry into society. The desire to turn one's life around, combined with structured support, can go a long way to help someone succeed in the first two years out of prison, which is key for avoiding recidivism.

This population often produces more loyal employees as they appreciate that you are giving them a chance, looking beyond their background check. A hiring manager at a manufacturer in Baltimore says their second chance hires have an [80 percent retention rate](#) compared to 60 percent for the general population.

## Other Populations to Consider

**Contract labor:** This type of opportunity won't be for every manufacturer, but you may have a task that can be done outside your facility. An MEP Center client, a small clothing company, contracted with sewers who work from home when it needed additional production capacity, which is appealing to people looking for part-time remote work.

**Retirees:** Nearly 30 percent of people aged 65-72 are working or are looking for work, and they bring with them experience and established networks. If they're already on Medicare, they may not need healthcare benefits.







## Manufacturers in New Hampshire Leverage CTEs and ELOs

### The Situation

Many New Hampshire school districts offer extended learning opportunities (ELOs) and Career and Technical Education centers (CTEs) for middle and high school students. ELOs allow for the primary acquisition of knowledge and skills through instruction or study outside of the classroom, such as independent study, private instruction, apprenticeships, and online courses. ELOs are frequently designed by students, their advisors, a highly qualified teacher, and a community partner.

CTEs are courses and programs designed to provide awareness of career options and include courses on manufacturing, machining, welding, and microelectronics assembly.

But these formal programs are dependent on support from local manufacturers, who may not be used to working together when it comes to workforce recruitment.

### The Solution

[The New Hampshire MEP](#) has been working with manufacturers and school districts to take advantage of ELOs and CTEs. For example, they recently worked with an ELO coordinator at a high school and four nearby manufacturers to help fund and participate in student training.

# CHAPTER 3

## Look for Prospects in Different Places

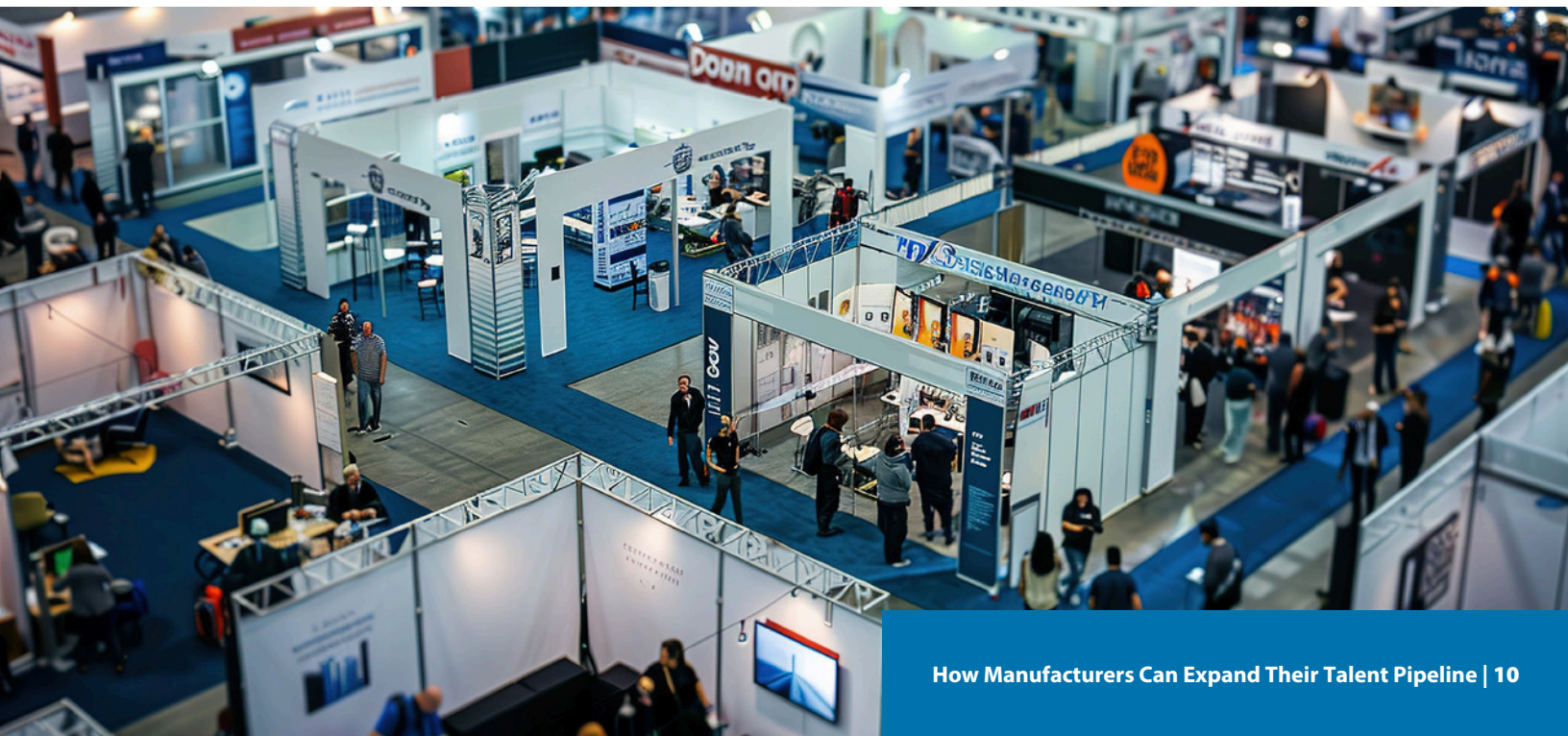
Manufacturers traditionally look to their local community college system, tech schools, and workforce development organizations for help attracting a qualified workforce. But that is no longer enough. Those approaches are more likely to yield qualified leads, but as we have discussed, the workforce dynamic has changed so that manufacturers need to look for a wider pool of prospects.

Your local MEP Center can help connect you with community-based organizations (CBOs) that have great insights into underserved populations and often can provide active job prospects.

### CBOs Offer Access and Insights into Their Niche Area of Focus

CBOs can help with:

- **Talent pipelines:** Identifying and connecting manufacturers with potential employees.
- **Job fairs:** Hosting or participating in events that bring together job seekers and employers, providing a platform for manufacturers to meet potential hires.
- **Pre-screening and referrals:** Conducting initial screening of candidates based on the manufacturer's specific needs, saving employers time and resources.
- **Addressing barriers to employment:** Providing support services to potential employees, such as transportation assistance, childcare assistance, support services for recently incarcerated individuals, or help with obtaining necessary certifications.





## Leverage Community Gathering Places for Recruitment

Community gathering places such as cultural centers, places of worship, community centers, and chambers of commerce are great places to prospect for non-traditional talent pools. Whether in formal or informal settings, it is critical to engage with people in these different communities in order to build trust. It also takes time to build trust in new communities, so consider how to build that engagement. And don't overlook how you might incentivize your current employees to help.

One example to consider is people who enlist in financial literacy organizations, such as [Operation Hope](#). They are motivated to not only learn how to manage their finances but also invested in how to succeed. They may be interested in a career that offers a fast track to annual earnings of \$50,000 or more.



## MEP Centers Are Forging Relationships With CBOs

MEP Centers across the MEP National Network are partnering with CBOs. CBOs provide manufacturers with insights into their populations while the MEP Centers provide support services for workforce development programs. Here are a couple of examples:

- [MAGNET](#), part of Ohio MEP, created a Manufacturing Sector Partnership, which then partnered with several nonprofits to launch [ACCESS](#), a training program for returning citizens to connect with manufacturing jobs.
- [New Jersey Manufacturing Extension Program](#) has launched the [ProAction Education Network](#), a consortium of nonprofits, government agencies, and schools that actively offers industry-recognized certifications to every interested New Jersey 12th grader, displaced workers, incumbent workers, and more.

# CHAPTER 4

## Simplify Job Postings

Many manufacturing roles require a unique blend of skills and a passion for hands-on work. Unfortunately, traditional hiring practices — including job descriptions with a long list of qualifications — often overlook talented individuals who may not have a college degree or extensive industry experience. This approach limits your potential pool of candidates and misses out on a wealth of skilled and motivated workers.

Consider broadening your job descriptions to appeal to creators, builders, and mechanically-minded individuals who are adept at problem-solving and learning hands-on skills — they may shy away from jobs that require extensive academic qualifications.

Review the importance of credentials as a qualifier. You can often learn required skills in three to four months in a concentrated training program. Look for skills that are transferable to a job and what can be taught in-house.

Pay attention to how you screen candidates; use hands-on experience as a qualifier for competency instead of relying on written tests. Many people are attracted to manufacturing because they prefer hands-on work — building things — as opposed to more “testing.”

### Revise Job Descriptions and Postings to Emphasize Skills

If you’ve been using the same job descriptions and advertising methods for several years, it’s probably time for a fresh look to make sure your openings get the attention they deserve. Revise job postings to “sell” the job and your company like it is a product or a service. Highlight your company culture and a sense of belonging within the “manufacturing community.” Use terms such as: “crafting” intricate solutions, “designing” efficient processes, and “building” the future. Focus on skills, not tasks or job titles.





However, as you go about revising your job descriptions and job postings, it is crucial to be authentic. The goal is to connect with people's interests while accurately representing the realities of your company's manufacturing environment.

Here are some suggestions for using job descriptions to attract a broader pool of prospects:

- **Prioritize required skills.** Long lists of essential skills or specific industry experience may discourage talented candidates from applying because they cannot check every box on your list. Prioritize the most essential skills and be prepared to train for the rest.
- **Expand your distribution.** Still advertising on the same three job websites? Don't underestimate the power of social media; about [80 percent of job seekers](#) use social media in their job search, according to employment software company GoHire. Utilize platforms popular with gamers and creators, such as Discord, Twitch, and YouTube Gaming.
- **Use high-impact visuals.** We are a visual society. Use high-quality images and short videos to showcase the manufacturing process, the team, and the company culture.
- **Emphasize continuous improvement.** Which of these sounds like a good place to work?
  - Setting objectives and reviewing shift performance vs. objectives (or)
  - Foster an environment of continuous improvement by inspiring employees to problem solve within their work cell
- **Appeal to a younger audience.** To stand out, postings can be fun and should reflect the culture of the company. Consider using more contemporary language. Young people talk about "leveling up" and "unlocking" new skills and opportunities. Frame job descriptions around challenges as opposed to tasks, and emphasize the need for pixel-perfect precision.

## Unlock Potential by Ditching Outdated Job Requirements

Two of the most common qualifiers in job posts are a college degree and professional experience related to the position. This is a prime example of how the old rules of employment have limited prospect pools. In many cases, it takes a large investment of time and money to earn a college degree. These parameters eliminate a lot of potential workers. It's worth asking if these credentials are the right ones.

There are great contemporary job training programs that can teach a career-based skill, such as CNC machining or robotics technician, in as little as 16 weeks. Higher education institutions offer programs for career paths in marketing, analytics, IT, and cyber security in similar time frames. If these skills can be learned in the equivalent of a college semester, why should you be limiting your prospect pool from the start? Focusing on related experience can be extremely limited in today's job environment. Instead, look for skills that are transferable to a job and that can be taught in-house.





## Second Chance Citizens Can Fill Your Workforce Gaps

### The Situation

“Second chance” citizens refers to individuals who were previously incarcerated and are now ready to return to the workforce. It is common to have reservations about hiring people with a criminal record, but this group of individuals can bring valuable skills and a willingness to learn and grow with your company. Multiple programs have shown that this overlooked demographic has demonstrated up to an **80 percent retention rate**, well beyond the 60 percent retention rate when hiring from the general population. With this in mind, the [Purdue Manufacturing Extension Partnership](#) developed the Manufacturing Skills for Success (MS4S) training program.

### The Solution

MS4S is a licensed program that equips people with the hands-on skills they need to fill essential positions in manufacturing when they are released from prison. It includes:

- Copyrighted plug-and-play materials for the licensed training curriculum
- Train the Trainer programs for upskilling instructors (Upskilling is a training approach that improves a current employee’s or supervisor’s skills — such as problem-solving and technical skills — to empower them to make their employers more competitive.)

The program has been successfully replicated inside correctional facilities across Indiana and in Tennessee. MS4S has been licensed to other states and organizations, and it has equipped nearly 2,000 people with the hands-on skills they need to fill essential positions in manufacturing. It can be used by community organizations to launch their own programs.



# CHAPTER 5

## Address Workplace Structures, Incentives, and Perks

Expanding your talent pipeline is about more than how you approach prospects and applicants. You will need to evolve your company and workplace culture to embrace doing things differently. This is also part of how you set yourself apart in your community.

It starts with how you communicate your value proposition to prospects and includes how you set expectations and meet their needs through recruitment, onboarding, and initial training. Companies that employ regular coaching and constructive feedback to their employees will stand out and are more likely to be employers of choice in a community.

Research shows people are not just looking for a job, but also a career path. Companies that offer training and professional development on work time are sending a clear message — they value their employees' futures. Research also shows that employees value flexibility. Consider offering remote opportunities when possible, options for four-day work weeks, and shorter days to accommodate parenting and child care, which is one of the biggest hurdles to employment.

### Offer Flexibility Whenever Possible

Small manufacturers are increasingly exploring flexible scheduling options to attract and retain talent. Flexibility must align with production schedules and customer demands, but many manufacturers are surprised to learn what might be possible and how employees will work with each other to achieve flexibility. Here are some key trends in flexibility:

- **Compressed workweeks:** Offering options like four 10-hour days or other compressed schedules can improve work-life balance for employees.
- **Core hours:** Establishing core hours where all employees must be present while allowing flexibility outside those times.
- **Shift swapping:** Allowing employees to swap shifts among themselves provides greater autonomy and accommodates personal needs.
- **Limited remote work:** While full-time remote work might be challenging in traditional manufacturing, some roles (e.g., office staff, engineers) may have limited remote work options.
- **Telecommuting for meetings:** Using technology to participate in meetings remotely can improve accessibility for some employees.



## Offer Benefits and Perks That Resonate With Prospects

Employees value incentives and perks that help them subsidize personal expenses such as transportation, food, and tools. Consider providing:

- **Child care:** Smaller companies that can't provide on-site child care have contracted with existing local providers. Others offer a stipend to help offset the cost of childcare.
- **Breakfast for an early shift:** This reduces friction to get to work on time, offsets expenses, and provides nutrition to start the day. If you do this, consider providing some type of food or incentive to other shifts to avoid potential resentment.
- **Electronic devices:** Consider providing laptops, phones, and any tools required to do the job. A Qualtrics report showed employees are 85% more likely to stay in a job longer than three years if they have the technology tools they need to do their job.
- **Safety-related equipment:** If work boots are required, consider providing those.
- **Transportation costs:** Provide mileage reimbursements for employees in a rideshare program or an informal carpool. Or pay for bus passes. Provide incentives for workers to help co-workers.

## Conduct 'Stay' Interviews to Shape Your Recruitment Messaging

One of the most effective retention tactics you can use is to implement "stay interviews" with existing employees to learn about the reasons they remain on the job. Your employees will help you shape the messaging for why people might be attracted to positions in your company.

## Conduct Cultural and Engagement Assessments

Gathering the needed information to build a great company culture involves quantitative and qualitative measures that can be gleaned from a culture assessment. The quantitative data can be collected through a third-party survey. The survey topics address a wider company perspective (people are held accountable for low performance) and a personal view (I find personal meaning and fulfillment in my work).

But the greater value comes from focus group interviews in which facilitators can dig into the responses. These focus groups provide context and examples that everyone can relate to. Culture is about common expectations and behaviors, and these focus groups often reveal subtexts and drivers of the current culture.

Employers of choice tend to share these follow-up actions:

- Position the results of the assessments as a report card for top management. It's essential for company leadership to own the results.
- Leverage feedback to encourage commitment to changing the organization. It would be worse to do these surveys and ignore the results than to have not done the surveys in the first place.
- Make the survey an annual occurrence.



## CHAPTER 6

### The MEP National Network Is Here to Help You

Every day, MEP Center experts around the country help manufacturers find the solutions they need. The MEP National Network has a proven track record and has helped U.S. manufacturers produce real impacts for more than 35 years. Since 1988, the MEP National Network has worked with thousands of manufacturers, leading to an estimated \$152.2 billion in new sales and \$34.2 billion in cost savings, and has helped create and retain over 1.7 million jobs.

In surveys, MEP Center manufacturing clients consistently rated their customer experience well above industry benchmarks and indicated they're likely to recommend the MEP Center they worked with to another company or colleague. Last year, MEP had a Net Promoter Score of 85.3% (above 80 is considered world-class).

The MEP National Network's ability to serve manufacturers depends on support from the entire manufacturing ecosystem. It works with local and federal government, workforce development organizations, educational institutions, economic development organizations, and federal labs, among others, to provide manufacturers with the resources and support that meet each firm's unique needs.

If you are interested in learning more about the [MEP National Network](#), or how to work with us, please contact [mfg@nist.gov](mailto:mfg@nist.gov). You can also visit our [website for more resources](#) and to [connect with your local MEP Center](#).

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The MEP National Network advances U.S. manufacturing by helping small and medium-sized manufacturers grow, make operational improvements, and reduce risk. At MEP Centers in every state and Puerto Rico, more than 1,400 manufacturing experts draw on deep industry experience to provide comprehensive, hands-on consulting and training solutions tailored to each manufacturer's unique challenges.

The MEP National Network has generated an estimated \$150 billion in new sales and \$34.2 billion in cost savings, and has helped create and retain over 1.7 million jobs.



Center for  
Industrial Services

INSTITUTE for PUBLIC SERVICE

Tennessee Manufacturing Extension Partnership



PHONE: 888-763-7439



EMAIL: [TMEP@TENNESSEE.EDU](mailto:TMEP@TENNESSEE.EDU)



WEB: [WWW.TMEP.CIS.TENNESSEE.EDU](http://WWW.TMEP.CIS.TENNESSEE.EDU)