

Ramona Schindelheim, WorkingNation editor-in-chief:

You're listening to Work in Progress. I'm Ramona Schindelheim, editor-in-chief of WorkingNation. Work in Progress explores the rapidly changing workplace through conversations with innovators, educators, and decision-makers, people with solutions to today's workforce challenges. Today, on Work in Progress, we're going to talk about the state of manufacturing and particularly talent and what kind of jobs are needed in the roles in this industry. Joining me to discuss this is Carolyn Lee, president and executive director of The Manufacturing Institute. Carolyn, thank you for joining me.

Carolyn Lee, The Manufacturing Institute president and executive director:

Thanks for having me, Ramona.

Ramona Schindelheim, WorkingNation editor-in-chief:

As always, I'd love to check in with you to find out what is going on in manufacturing. Right now, I feel like there is an upsurge and it has been happening for the last couple of years. Tell me where we are.

Carolyn Lee, The Manufacturing Institute president and executive director:

That's a great, great question and great way to frame the conversation. We are at a all-time high since the Great Recession with manufacturing with jobs filled here in the sector. We're just hovering at 13 million and that means we have recovered from all the jobs that were originally lost during the Great Recession and now we have gone back up all the way to the top of the mountain, but we still have almost 600,000 open jobs about every month. JOLTS just came out recently from the Department of Labor and we have 583,000 open jobs last month in the sector, and the churn has slowed down so people are coming and staying, but we have so many jobs still to fill. If we were able to fill all of those, we'd be well over 13 and a half million jobs. For us, it is a very busy time and we're looking to bring more people into high-paying family-supporting manufacturing jobs.

Ramona Schindelheim, WorkingNation editor-in-chief:

Now, we're talking about the US manufacturing industry. What kind of sectors are you seeing? Where are the jobs being created?

Carolyn Lee, The Manufacturing Institute president and executive director:

It's everything. I mean, you read a lot in the paper because of the CHIPS Act. You'll read a lot about semiconductor investment of course, and that is because there are several huge investments, new builds that are underway and those are all in the construction phase, but we have investment across the whole breadth of manufacturing. Why we say to people that no matter what you're interested in, whether it's consumer products or auto manufacturing or electric vehicles or aerospace, you name it, you pick it, there's a role open in manufacturing. While 49% of manufacturing jobs are pretty much production jobs, the rest run the gamut. We need finance and accounting and marketing and HR professionals, all of the things that make our businesses run. Of course, there's a huge need for shipping and logistics personnel too. Really, there's something for everybody here.

Ramona Schindelheim, WorkingNation editor-in-chief:

For the Infrastructure and Jobs Act and the CHIPS Act, these are federally-funded programs that are coming into communities and they're helping them say, okay, we're going to bring jobs back here. It was a bipartisan bill, so it's in every community. Is there any part of the country that's seeing this more than

others? Because just to say we thought of the Midwest as that manufacturing bill for such a long time, is there one part of the country where we're seeing this resurgence?

Carolyn Lee, The Manufacturing Institute president and executive director:

For the CHIPS Act, there have been huge announcements of investment, of course, from Intel in Ohio. You have large investments being made in Texas and then a number of very large investments in Arizona as well, and that's just specific to CHIPS. If you look at EV, there's huge investments in Kansas and in Alabama and in Georgia and the Southeast. Really, there's some variety in what kind of investment is happening all over the country. Not only has it been CHIPS and infrastructure bill that have driven a lot of government funding, there is a huge grants program out of the Department of Commerce, the Good Jobs Act, which came from a previous set of legislation that helped invest in job training. That's something the manufacturing institute team has been working on in a number of regions including Fresno, California and Ohio and Texas.

It is really that across the country we've seen an investment in manufacturing facilities, manufacturing construction is up and that dates all the way back to post-pandemic. There's been a lot of on-shoring and near-shoring that went on because we had this huge supply chain disruption, and so a lot of investment is coming into the country. Then that comes on the heels of comprehensive tax reform back in 2017 that then became enacted and then the drum beat kept building, and then you had infrastructure and the CHIPS Act and several other pieces of legislation. As much as there's been a public policy drive to support investment in manufacturing, the sector itself has been investing and bringing back.

That's helped by having a favorable business climate with consumers in the US is still spending money and the US has been relatively strong for an economy since COVID, but it is a blend of things because of course, all of that investment can only happen if the supports are there and you don't have too many headwinds from the government. Government can of course, always be the health or a hindrance, and that's what we have to make sure that we are investing. For The Manufacturing Institute, we are focused on the jobs and the workers and the skills and making sure we're set because with all this construction, we're going to need to make sure we're filling the roles that will come with these new facilities.

Ramona Schindelheim, WorkingNation editor-in-chief:

A new study from The Manufacturing Institute in Deloitte says that this resurgence and boom is going to create a lot of jobs. Tell me what the forecast is for that.

Carolyn Lee, The Manufacturing Institute president and executive director:

That's right. The MI just released with Deloitte our sixth talent study. What we found in this year's update is that in the next 10 years, the US will need to fill 3.8 million manufacturing jobs. Now, remember what I said earlier, this is coming on top of a high in manufacturing positions since 2008. We're going to need to fill another 3.8 million jobs. Some of them will be because of people retiring, but a large number of them is because of the growth in the industry. Of that 3.8 million, about half are expected to go unfilled unless we're able to find new talent pools. Our challenge on talent has been we don't have the people and the people with the skills. It's really incumbent upon organizations and manufacturers and entities, like The Manufacturing Institute, to help make sure we're developing new talent pools with the skills we need for modern manufacturing.

Ramona Schindelheim, WorkingNation editor-in-chief:

What kind of skills are we looking at? Because you and I have talked about this and it's not new, that the image of factories still, I think in a lot of people's minds tend to look like the old dark, let's see, working on the line only. Now, there are hands-on jobs that you have to do, but a lot of the skills you need are more digital, more software. Tell me about those roles.

Carolyn Lee, The Manufacturing Institute president and executive director:

Absolutely, and that is what modern manufacturing looks like. It is digital, it is digitally enabled. If you walk up to a CNC machine, it is enclosed and all the hydraulic liquids are inside, not like many of the conversations we've had, Ramona, where in years in past that it looked different, and it's all digitally enabled. We have connected factories, we have a 4.0 real time here in the sector. It is about those digital skills and capabilities. We need data scientists and computer scientists just as people say, "Oh, if you have those skills, you're going to go in the tech sector." Well, a lot of the tech sector is the manufacturing sector, I would argue. Also, we need those skills in industrial manufacturing because that is how we're operating our facilities today.

In addition to those, we also need industrial maintenance technicians. The modern technology that is in manufacturing today cannot operate unless you have those high in demand maintenance technicians. The MI is really fortunate to now operate and be expanding the Federation for Advanced Manufacturing Education, the same multi-skilled maintenance technician apprenticeship program founded by Toyota that we've now been running since 2019. We need those advanced maintenance skills, those 4.0 skills. We also need to have software developers and other engineers and logisticians. Nothing works in a connected economy unless we have those really, really high in demand logisticians that are helping us on the logistics side, get everything where it needs to be. Not only the finished product, but all of your inputs too.

Ramona Schindelheim, WorkingNation editor-in-chief:

I promise next time we talk I will not bring up the old school view of manufacturing because we've been past that for so long. I do think it's still stuck in people's brains, but I'm never going to bring up again. Actually, to that point, are you having any trouble recruiting people? What are the steps out there to recruit? Then we could talk about training in a little bit.

Carolyn Lee, The Manufacturing Institute president and executive director:

Yeah, absolutely. We still are having, we do have a perception issue with the industry. It has gotten better. Actually, one, I hate to say a silver lining of COVID because it had such a devastating impact in the US. One thing that came from COVID during the experience was that people, the general public understood the essential nature of manufacturing. Manufacturing facilities were open for the most part, even at the very beginning when many closures were happening, manufacturing needed to stay open because we were making things that were essential to the response effort to making sure that we had all the consumer needs that filled.

The toilet paper supply chain, that was the hot topic a couple of years ago, just around this time actually. Manufacturing jobs have increased in perception, the value of manufacturing has increased in perception among the public because of that experience and the essential nature of the sector. That helped, but we still need to have people understand what goes on in those giant buildings that are way back from the road and perhaps in more rural areas. That's why we have to do career awareness events. That's why the NAM and the MI have run for the last several years, our creators wanted campaign to really change the perception of the industry and have people, particularly young people, see that there's

a place for you in manufacturing to be creative and to solve problems and to work with teams to solve a bigger thing to come together.

It's also about things like MFG Day, which we've been talking about for a long time now. Then it's about career pathways. How do we help people see that once they have that spark of like, oh, this is exciting and interesting, but what do you do? Well, here's your Earn and Learn program. Here's your apprenticeship program. Here is your short course of skills that you can obtain locally that will set you on a path for manufacturing careers. That once you're inside, and this was something we got to in the paper with Deloitte, once you're in a career that there's career progression for you and that you can continue to learn skills that will help you build a full-time career, a lifelong career with lifelong learning that's going to help you do things that are cool and exciting and interesting every day.

Ramona Schindelheim, WorkingNation editor-in-chief:

One of the points of your study, and also, I think it is part of the DNA of The Manufacturing Institute already and the industry is that the employers themselves have to be that bridge to a talent pipeline, I guess you can say. How do you want them to go about this? What are your recommendations?

Carolyn Lee, The Manufacturing Institute president and executive director:

That's a great point. I was really pleased to see in the paper that 9 out of 10 manufacturers that we surveyed for the paper with Deloitte indicated that they are working to form at least one partnership to improve job attraction and retention. Actually, on average, they're partnering with four or more. I mentioned FAME, the apprenticeship program a few minutes ago, and FAME is an employer-centric model. It was created by Toyota because they realized they had a need for multi-skill maintenance technicians that wasn't being filled by their local community college. They built out a program that filled their need. They went to their local education partner and said, "Hey, if we build this, this is what we need. Will you partner with us?" Then they realized in order to fill the class and keep enough classes going into the future for the college to make that investment, they brought another employer and it became a multi-employer local effort to build this.

Then the business community locally also came behind. We took it on and that's what we're expanding across the country. We've doubled the size of FAME since we began leading it in 2019. What that does is put the employer in the middle, so you can have a whole consortium of employers, and they don't all need to be the size of a Toyota who's been a great leader, but they're a huge company. You can have small and medium-sized manufacturers come to the table and say, "I'm going to participate in the local FAME chapter, but I only need two people every two years." That's what they do, that's who they support and they sponsor. Because they're pooling the effort with other local companies, they're able to support an entire cohort at a community college.

It's things like that where manufacturers are being creative and adjoining proven models like FAME or starting up new local consortiums for things like Second Chance Hiring, where you're hiring folks who are coming out of the criminal justice or having had criminal justice system exposure. You're saying, "Okay, how can we come together to build the talent pipelines we need here locally?" Because every business has their own flavor and every region has their own specific challenge that they're trying to overcome. Companies are taking it into their own hands because we can no longer wait that at the end of the education system, students are coming out with all the skills that we need. Now, we need to do a better job of, and this work is underway to make sure that K-12 education understands the need of modern manufacturing, but we also need to help shape those individuals and those people with the skills so that they can fill these high-paying family-supporting jobs.

Ramona Schindelheim, WorkingNation editor-in-chief:

I think the idea that if you start in K-12 and tell people that if you have a spark for something, if you have an interest in something, it doesn't have to be the hands-on drill press or the parts line. If you're interested in STEM, there's a role for you, an important role for you in manufacturing. Getting that message to kids is I think, crucial if you're going to keep building this pipeline that you need.

Carolyn Lee, The Manufacturing Institute president and executive director:

That's right. I see some of the engagement activities that are in schools today, and I think, "God, I wish they had this when I was a kid." Maybe I would've found a different career path. I love what I do, but it is exciting to see the hands-on learning, the project-based learning, the exposure that students have today to understand what engineering and how STEM isn't this thing that lives in a box in white lab coats. There is that of course, but it's also, it's the building, it's the taking apart, it's the fixing, it's the problem solving and that part of it.

It's working with teams and collaborating, and those things spark and excite different individuals. Bringing that to life is really important and making sure that our K-12 system that students see. I have pre-teens and teenagers and they come home and they say, "I'm just learning algebra." Well, why? Why are you learning these things? How is that going to be applied in your life? That is what makes it stick for a lot of students. Then that excites them to go on these careers. That's why we've got to make sure we're bringing modern manufacturing and the careers and the possibilities into K-12 so that they have those building blocks to be ready for the next step.

Ramona Schindelheim, WorkingNation editor-in-chief:

All jobs are local, so the good part of all of this is if you're manufacturing, if you're an employer in a small, you mentioned rural community, there are opportunities there. We've talked a lot about this on WorkingNation recently about how the idea of people wanting to stay in their communities because that's where their homes are, where their families are. If there's not an opportunity, they can't do it. It sounds like manufacturing is poised to create even more opportunity for people to stay where they want to be.

Carolyn Lee, The Manufacturing Institute president and executive director:

That's right. We talk about this, especially when we do things like MFG Day, which of course, is the first Friday of every October every year, but any day, it could be manufacturing day. It's really a call for people to open their doors and manufacturers to open the doors and bring the public in. What we've learned over time, whether it's MFG Day or actually our veterans program, our Heroes Make America Initiative out of the institute, as we've built up these programs in regions, we went to one place, we were in Texas when we started our Heroes program there, and we had a local partner say to us, "There's no manufacturing for Cavazos." We did a survey and found, no, there's actually, I think it was a hundred manufacturers in a 30-mile radius. People might not know because it's not always the big OEMs.

It's small and medium-sized businesses, 50-person shops, essential part of that supply chain. There's a role, there are always roles available and open. What we need to do in our sector is make sure that we're highlighting that we are here and manufacturers are doing that more and more, but it's how do you make sure that there's visibility for the companies that are small and medium-sized that are not the name brands, what those roles and opportunities are, because then you can attract those folks locally. You're saying, "I do want to stay here." You're coming out of high school, I want to make my future here in this community, but you don't know where to go. How do we elevate these jobs to make sure that they know that there's a chance, an opportunity for them locally?

Ramona Schindelheim, WorkingNation editor-in-chief:

We've talked about K-12 or community college level, but there are people who maybe have lived in a community for a while, so mid-career workers. Maybe the particular business that they have worked at shut down, or maybe they've gone to a couple of different jobs or maybe they want to move back. What kind of help can be out there for that mid-career worker, that older worker who really wants to find that good-paying job?

Carolyn Lee, The Manufacturing Institute president and executive director:

That's a great question. That's a huge need. It is easy to say, okay, we're just going to recruit from the just out of school population. There's a huge segment of the population that's either underemployed or unemployed or reemerging into the workforce. I mentioned Second Chance, that's one population. One in four Americans have had exposure to the criminal justice system in their history that might then prevent them from getting a good durable job and having a family supporting pathway. We've got to break down barriers to that. You also have folks who are underemployed who perhaps came out of a skilling program with a skillset that they're not using in their sector. How do we make sure that we're able to translate those skills in? The Institute has been working with the support of Walmart for the last several years with some other partners to build a military readiness badging system.

We can take and translate all the skills that you've earned in the military because of your time and service and translate that to manufacturing certifications. We could tap into the talent pool not only of those transitioning out, but those who are already fully-separated veterans who are out in the economy and perhaps underemployed because they weren't able to say, I did all of this in my time in service and this is what it means in today's economy. We're working to fix that. Then Walmart I know is looking to take that model and expand it across the broader economy, and we're excited to be a partner in that. As we look at this, how do we tap into these talent pools? How do we make sure that perhaps a parent who stopped working to be able to care for young children, how do they reemerge into the sector?

How do we make sure that they have the pathway in the translation of their previous skills and experience, but also, how do you help them with a short course of training, perhaps a certification or a certificate that will let them have that skill that's needed today? That's where our local community and technical schools and all those institutions are key partners, and manufacturers are working with them to make sure that the skills are dialed in. That's a lot of the work that we do across the country. We talked about this during COVID, when a lot of hospitality and service sector jobs shut down because of course, people weren't out and about during part of the pandemic. How do you translate some of those customer service jobs? We have customer service jobs in manufacturing. You have to work with your clients to make sure they're getting what they need.

We have shipping and logistics. We have the marketing support and all of the other things that go into jobs that you think about in hospitality and service sector. For us, not that we want to poach from the entire economy, but we want to make sure that people see that there's applicability of their skills over into manufacturing. For manufacturers, when we're hiring, we need to look at skills, not just degrees, and look at what the skills are and break down the jobs into skill buckets so that you can say, oh, wait, this person has that skill from something else and it is applicable here. That is work that we're doing because that's going to help lower barriers and bring people in.

Ramona Schindelheim, WorkingNation editor-in-chief:

Let's talk directly to that job seeker. Right now, that worker, tell me why they should be working in manufacturing.

Carolyn Lee, The Manufacturing Institute president and executive director:

We have the, on average, the highest pay across the economy, and 95% of our jobs have benefits as well. It's really important that these are family-supporting careers, they're durable. When you make an investment in manufacturing facility, you're not going to pick it up and move it down the road a hundred miles because you got a better deal down the road. These are durable investments. I talked earlier about all the construction that's going on in the sector, and those are big, huge multi-billion-dollar investments in many cases, and so those jobs are going to be there. Go, find out what that industry is. Go talk to your local workforce board or workforce one stop or your local community and technical school and find out. There was a point last summer, I haven't looked at this data recently, but I can tell you that there was a point last summer where the number one opening in manufacturing was actually a forklift operator.

You can get a forklift operator certification in about two days, and those are certifications that are offered at local community colleges. You could get that, find your way in and then begin to figure out, okay, what am I interested in? Where do I go from here? These are pathways to durable careers, and I will tell you because my favorite part of my job are all the tours that I get to do, all facilities, it is like Disneyland in there. There is so much happening. There is always something new happening. There are exciting opportunities and there's constantly that upward progression possibility. If you are eager to learn, come in and continue to find your way. That is really what's possible in that modern manufacturing.

Ramona Schindelheim, WorkingNation editor-in-chief:

Carolyn, always a pleasure to speak to you.

Carolyn Lee, The Manufacturing Institute president and executive director:

I always enjoy our conversations, Ramona. I appreciate it and look forward to the next one.

Ramona Schindelheim, WorkingNation editor-in-chief:

I have been speaking with Carolyn Lee, president and executive director of The Manufacturing Institute. I'm Ramona Schindelheim, editor in chief of WorkingNation. Thank you for listening.