FUTURE FOCUS

Workers, Image and a Whole Lot More

By Charlee Beasor

We make stuff in Indiana.

More accurately, we make *a lot* of stuff in Indiana.

Indiana leads the nation in manufacturing, both in share of gross state product (28.7% in 2016) and employment (16.8% in 2016), according to the National Association of Manufacturers (NAM). (See more in Found Elsewhere on Page 54).

NAM also reports these indicators:

- Manufacturing accounted for $98.4 billion in total output from the state in 2016
- In the same year, there were 516,900 employees in the manufacturing sector and the average annual compensation was $74,849

And in 2016, the Center for Business and Economic Research at Ball State University released a study showing advanced manufacturing makes up over half of all of Indiana's manufacturing employment.

All are signs that Indiana's manufacturing sector is flourishing. But is it sustainable for years to come?

The workforce challenges are daunting and some of the potential solutions are long term. They require changing the perception of manufacturing by young people; that means it may take years before there is a payoff that translates to an increased labor pool.

Workforce, workforce, workforce

There's the old adage about "location, location, location" being the No. 1 factor for business success. When it comes to the overall economy and manufacturing, however, many have suggested that should change to "workforce, workforce, workforce."

Jody Fledderman, president and CEO of Batesville Tool & Die, notes he is more concerned about workforce availability than development.

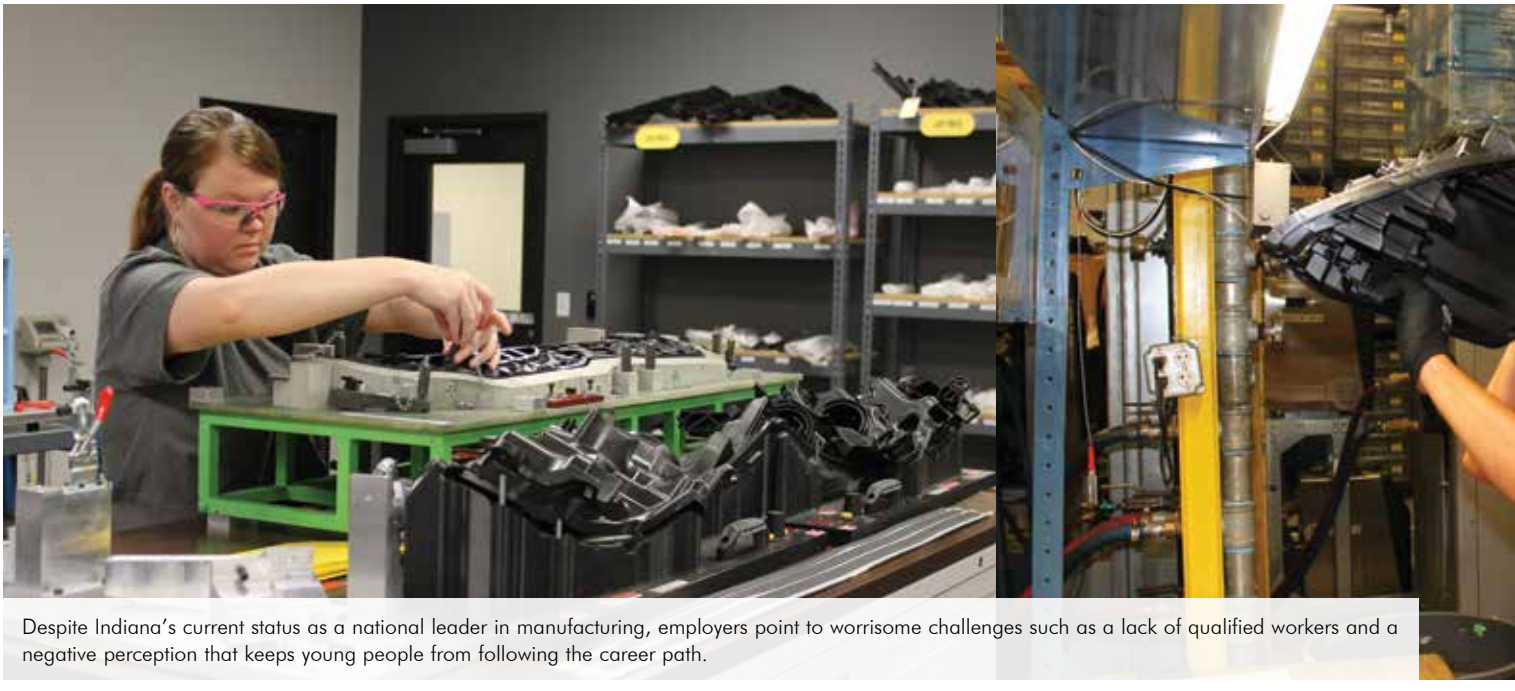
Fledderman points to Indiana's low unemployment rate and slow population growth as major red flags.

"Between Indiana having a million job openings in the next 10 years … population growth is 1% – the math doesn't add up. We need more people or the jobs are going to go somewhere else," he warns.

"We've been through these things before at tight unemployment times. This one is different and it has a different feel to it. We see it getting way worse before it gets better. We're already at almost full employment and a lot of growth to deal with. It's a pretty simple basic question: Where are the people going to come from?"

Fledderman points to one possible solution: incentivizing people to move to Indiana. He says Indiana companies are fighting over the same workers. And eventually getting more workers (by encouraging those at the high school level or younger) doesn't solve the immediate needs.

"It feels like there's a bubble that's going to burst and right now it's a wage battle,



Despite Indiana's current status as a national leader in manufacturing, employers point to worrisome challenges such as a lack of qualified workers and a negative perception that keeps young people from following the career path.

which is good for the worker," he explains. "But it doesn't do you any good if you can't afford to hire anyone else."

R&D edge

Melanie Walker argues funding for research and development is of the utmost importance for Indiana's manufacturing landscape. Walker is president of plastic molded component supplier TASUS Corporation and CEO of Tsuchiya Group North America. The company is headquartered in Bloomington and its parent company is based in Japan.

Walker is also a board member of the Applied Research Institute, created to help facilitate technology transfer and commercialization between Indiana higher education institutions, the military industry and the Naval Surface Warfare Center, Crane Division.

She explains the efforts of the Applied Research Institute are intended to increase the scope of technology and advanced manufacturing.

"I would say that I think at the macro level, research and development dollars are critical. We can talk about skilled labor and advanced automation and about process improvements and investment and training and all of those things, but we have to keep advancing our technologies and our product to drive all of that other activity that comes underneath it.

"At the micro level, it's all about making certain that we have a robust vocational education system in order to develop the workforce that we need," Walker adds.

She says the prospect of growing manufacturing with the Internet of Things – connecting everyday devices to the internet – has "more legs to it than 3D manufacturing does right now.

"The way that U.S. manufacturing is going to find success is through product advancement and technology. … I think that's at the core of growing U.S. manufacturing," she declares. "We have to stay at a more advanced level, not a base level, but a more advanced level. Because that's where we can compete."

'Smart manufacturing' revolution?

The authors of the *2017 Indiana Manufacturing Survey: Upgrading for Growth* highlight increasing automation as one steady component over the past few years of the survey, and one where manufacturers are continuing to invest.

Steve Jones and Mark Frohlich are faculty members at the Indiana University Kelley School of Business. Jones is a professor of finance and Frohlich an associate professor of operations management.

"We've been seeing the uptick in automation for the last four or five years of the survey; it's been steadily increasing," Frohlich offers. "In Europe, they call it Industry 4.0. The American phrase is 'smart manufacturing.' That's what we saw this year in the report, to a greater degree than ever before."

Frohlich also highlights that Indiana companies are moving past "basic" automation – using robots to lift heavy objects, moving parts between workers, etc. – to more "modern" automation.

Jones points to what he considers an "interesting" survey response on the topic – that automation will increase employment at their firms.

"Although there is a certain amount of substitution for capital labor there, it also creates efficiency and gross markets. … I don't view automation as a problem. It actually could be good for the industry, a business and also for the employees, ultimately, in the long term."

Walker calls automation – specifically using robots – "old news" in the advanced manufacturing landscape.

"There is so much more advanced automation beyond that … using digital technology and the Internet of Things and advanced data analytics to run a smarter business. It's taking all of those great digital technologies and advanced engineering and just being a much smarter manufacturer," she says.

"Several years ago, I tired of hearing manufacturers complain that they didn't have the skilled workforce they need. It felt like we were not taking the initiative to fix that. I would say the burden is on the manufacturers and the responsibility is on the manufacturers to generate their own workforce and that's what we're doing, with considerable success."

– Melanie Walker, president of TASUS

That, however, gets back to the workforce challenges.

"What that requires then is a higher skill level of employees. And it's important to have vocational education support. That's the core of our workforce. Those two-year techs and engineering techs. And (we need) the next level too; there's not a shortage of that, of true engineers, who use the data analytics to get to that solution."

Fledderman notes that it's faster to retrain a company's workforce than to go out and find new talent that is more prepared for the current job requirements.

"Indiana is a great place to manufacture, but the (workforce) problem is created because it's such a great place and it's so attractive. It's causing issues that need to be addressed or people aren't going to manufacture here as much because the resources here won't exist," he asserts.

Batesville Tool & Die supplies precision metal stamping components. Company president and CEO Jody Fledderman is concerned about having enough workers to fill the needs of manufacturers.

Image rehab

Manufacturers that responded to the *2017 Indiana Manufacturing Survey* highlighted the sector's perception problem as another challenge to overcome.

Dirty factories, uncomfortable conditions and back-breaking work are mostly relics of the past. But the "image" issue persists. Despite average salaries of over $74,000 without the requirement of a four-year college degree (for many manufacturing positions) and clean, air-conditioned factory floors, many young people are not interested in the jobs that exist in the sector.

There's no clear solution. Public relations campaigns to show what the jobs entail help. Annual Manufacturing Day events held around the state and country in October, for example, allow students to get a firsthand look at manufacturing in high tech and innovative companies.

In Batesville, manufacturing is in the blood of many of families, says Fledderman. The company, along with other local manufacturers, Ivy Tech Community College and the local high school, created a co-op program for students to get an early look at modern manufacturing.

"In our part of the state, our city and our region, it is very manufacturing intensive. A lot of these kids' parents are working for manufacturing companies," he acknowledges.

The program allows juniors to spend part of their time at the high school, with some of the curriculum from Ivy Tech and time working at one of the businesses (they rotate through the companies involved). They are paid for the co-op time during their senior year.

"They will graduate high school having been in a program for two years, one semester short of an associate's degree and it didn't cost a nickel. Still, to sell that, we do lots of things like open houses for the public and meet with the parents," Fledderman explains.

But the program is small. He doesn't anticipate scaling that program for the whole state. He looks for more regional and local partnerships to step up.

"This is not a problem that will be solved at the state level. This is a regional problem. I don't know what regional means – could be county, or regional in Fort Wayne could mean Fort Wayne because of the population," Fledderman suggests.

"The point is this was developed and monitored and driven by the region. We took it on ourselves to solve the problem, because we have a need."

Walker and others are also working on the image issue through opening the doors to students, guidance counselors, parents and college professors, and activities that include attending career fairs.

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(Indiana Manufacturers Association photo)

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– Mark Frohlich
associate professor of operations management
Indiana University Kelley School of Business

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the skilled workforce they need. It felt like we were not taking the initiative to fix that," she recalls.

"I would say the burden is on the manufacturers and the responsibility is on the manufacturers to generate their own workforce and that's what we're doing, with considerable success."

Frohlich says he has a poster in his office that boasts "$90,000 to start" for the Steelworker of the Future program at ArcelorMittal.

"You read the fine print and they want them to get a two-year associate's degree in advanced manufacturing. They set up their own training facility and are rolling out about 30 or 40 young people now," he says. "But the hook is the $90,000 to go. … That number is not that crazy. Around Batesville or Cincinnati, it's not that way, not the $90,000, but people are talking $60,000 or $70,000 to start in their early 20s."

International footing, national needs

Walker is president of the Japan-America Society of Indiana. TASUS is one of the 290 Japanese-owned companies in the state.

"We have nearly 55,000 employees employed by those Japanese-owned companies. We're the only state in the United States that has three Japanese (automotive) OEMs (original equipment manufacturers). That's a huge coup," she asserts.

"We are an extremely internationally-based manufacturing state. In comparison to our neighbors east and west and north and south, we have great global representation in our state."

Fledderman recently traveled to Washington D.C. to discuss workforce development with officials at the federal level.

"There's very little funding available at the national level for workforce development and what there is goes through workforce investment boards, which is confusing," he notes.

Tax credits for companies training or retraining workers would have a long-term, positive effect, Fledderman says.

"It upskills the people and raises wages. It's an investment that would be repaid a number of times over in my opinion," he adds.

Jones cites two federal-level issues that could make an impact for manufacturing.

"I'm not sure there is anything that could favor Indiana (from a federal policy standpoint), but for the sector in general, probably the biggest area would be tax reform. And then regulatory reform a close second. That could include a number of things: EPA, as well as health care," he offers.

Jones notes the survey now asks manufacturers to gauge their own health.

"Every year, the percentage that report themselves as 'challenged' has shrunk," he says. "To me, I think that's one of the most optimistic things, that barometer. Most said they were stable and healthy."

Fledderman also highlights supportive state leaders, as well as Indiana's investment in infrastructure, as reasons for optimism.

"There is no place in the country I'd rather be a manufacturer than Indiana," he contends. "We have representatives that get it, they care about the state. The consequences are unintended, a problem created from our success."

RESOURCES: Jody Fledderman, Batesville Tool & Die, at www.btdinc.com | Melanie Walker, TASUS Corporation, at www.tasus.com | Steve Jones and Mark Frohlich, Kelley School of Business at Indiana University, at www.kelley.iupui.edu