

MAKE IT HAPPEN

We have a vision to lead the world in smart manufacturing. This requires radical changes in four areas: talent, innovation, technology, and leadership

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Top 10 Tips to Lead the World in Smart Manufacturing

THE FACTS: In 2004, U.S. manufacturing output was more than double China's. In 2021, China's output was almost double the U.S. If we want to rebalance the scales it will take bold leadership at every level to lead the world. Here are some ideas.



Commit to the Future. Growth happens when companies lead well for today and tomorrow. The key is to keep one eye firmly focused on the future and invest accordingly. That's what helped ROE Dental Labs thrive during the pandemic. They normally manufacture crowns and dentures, but the company used 3D printing to pivot to face shields and nasal swabs. The key to success? The company had already transitioned to Industry 4.0 and trained its workforce in digital production and 3D printing. "That really helped us make this transition quite easily. I know in my industry, the companies that haven't made that plunge into technology are falling way behind. And many of them won't make it," says BJ Kowalski, ROE Dental president.



Rethink risk. By its very nature, manufacturing is defined by testing, measuring, refining, and constantly improving production. It's no surprise that risk is an unwelcome visitor. Leaders, however, must overcome risk-aversion to fully embrace the future. Mike Garvey couldn't agree more. Garvey runs M-7 Technologies, a manufacturing engineering research company that uses cutting-edge digital technologies. "Making the leap to adopting Industry 4.0 looks, at first glance, like a risk," Garvey says. "But manufacturing CEOs need to understand that successfully adopting digital technology is actually about limiting risk. The upfront costs are real, but failure to adapt will lead to obsolescence."



Embrace Collaboration. Manufacturing is not a solo sport. Collaborating with other manufacturers, funders, researchers, schools, and community groups can help smaller companies fight above their weight class, embrace new technologies, and unlock growth. Collaboration is the only way to address massive issues like the talent gap. When it couldn't find enough people to hire, Thogus, a plastic injection molding company, partnered with Lorain County Community College to launch a five-year training program for high school students and recent graduates. It's working so well they're already planning to expand the program. "Trade schools have all but vanished," says Matt Hlavin, CEO of Thogus. "So, we're creating our own."



Actively inspire the next generation. Raise awareness of great manufacturing careers, sponsor tuition for employees, or get involved in innovative training programs for high school students. Lincoln Electric is a founding partner of MAGNET's Early College, Early Career apprenticeship program. Chris Mapes, Chairman, President & CEO of Lincoln Electric recounts a memorable conversation with the mother of one apprentice who hoped her son would get a permanent job at Lincoln. "I remember telling her, 'I think you should be very proud, but we need to set the bar higher, because I don't want him to come and just work for Lincoln Electric — I want him to come and be a leader at Lincoln Electric.'"



Build an inclusive industry. A "big tent" mentality is the only way the talent shortage is ever going to be solved. At Jergens Inc., that thinking created a pioneering online program called Tooling U that's trained 800,000 people. Jergens also started a first-of-its-kind training program for special-needs students. "The manufacturing community has to open up a big tent. That means welcoming special-needs kids to the manufacturing floor. That means welcoming second-chance individuals who were formerly incarcerated. It means that somebody coming from the hospitality sector who wants a higher-paying manufacturing job has the opportunity to upskill into the role. We have to be inclusive," says Jack Schron Jr., President & CEO of Jergens.



Focus on technology, innovation, and talent. Investing in technology, constantly innovating, and finding new ways to train workers are signs your company is on the right path to a successful, resilient future. At National Safety Apparel (NSA), they've attracted an incredibly diverse workforce from 40 different countries by working with refugee settlement agencies and starting their own sewing school to train new employees on the job. "Innovation is in everything we do. How we approach work, how we train people, how we



Reinvent your future. With work and the world rapidly changing, it's up to each company to innovate the way forward. Lumitex is a lighting company that's constantly reinventing it's future. It started in automotive lighting and then went on to invent the world's first backlit keyboard, light-up sneakers, and a light blanket to treat babies with jaundice. Most recently it's spun off a medical device company that uses light to treat and prevent devastating side effects of cancer treatment. "I think there's a deep mine of potential in midsize companies throughout Northeast Ohio, many of which have ideas that they could incubate, develop, and potentially spin off. And that attracts talent. We have to keep reinventing ourselves," says Peter Broer, CEO of Lumitex.



Build your community as you build your company. For manufacturing to thrive, our communities need to thrive too. In the 1980s, Pierre's Ice Cream Company outgrew its factory and made a bold and risky decision to revitalize an 8-acre brownfield site in MidTown Cleveland – back then, an economic wasteland. "We were one of the first companies to have new construction between Cleveland State University and Cleveland Clinic. Once we moved in, in '95, it took another 20 years for things to fill in around us. So, we stayed here alone that whole time,



Invest in Industry 4.0 at scale. This is no longer an option, it's an imperative. "Investing in innovation, investing in transformation, is required not only to grow your business, it's required to sustain your business. If you're not willing to make those investments today, I guarantee one of your competitors across the world is making those investments, positioning them to take business from you in the future. For Cleveland, if we don't invest in smart manufacturing at scale, another region will, and our industrial heritage will be a part of our history rather than a platform for our future," says Baiju Shah, President & CEO of the Greater Cleveland Partnership and head of the Cleveland Innovation Project.



Push progress in the same direction. As we rebuild our post-pandemic world, we have a singular opportunity to build a better future for manufacturing. A more resilient supply chain. A diverse, technology savvy workforce. A digital, connected, innovative industry. We can all lead, no matter where we are or what size our company is. Leadership starts with each of us. If we come together to catalyze change, we can build an industry that leads the world. "We need bold manufacturing leaders who take risks. Who invest in talent, technology, and innovation. We need powerful partnerships that push progress in the same direction, because we are exponentially stronger when we come together," says Dr. Ethan Karp, President & CEO, MAGNET.