

INDUSTRY 4.0, SKILLS ENHANCEMENT AND WORKFORCE READINESS



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ARTICLE TAKEAWAYS:

- New technology requires training to succeed
- Recent graduates offer a fast track to adoption of new technology
- Management buy-in to training and modernization is a key to future success
- Make a tech roadmap and assign team ownership to onboarding new technology

Right now, the ultimate job of every foundry related business owner, general manager, and shop floor supervisor has to be figuring out how to keep the work that has been re-shored from going back overseas - without losing money.

Other hats that you'll have to wear in 2021 are:

- How do we stay in business with potential on-going pandemic issues?
- How do we keep socially distant workspaces?
- How do we maintain headcount?
- How do we get ahead of a potential retightening of workplace safety and environmental regulations?
- How do we increase profits for the short term and long term?

The solutions to many of the foundry problems: scrap, safety, environmental monitoring, labor efficiency, worker training and retention, etc. are already in the field - there have been tools available since the old Industry 3.0 "revolution" happened and now we are in Industry 4.0.

The keys to all these issues are sitting in your chair, they're on the factory floors and some of them are wearing smart devices already. Most of the smart ones are already wearing PPE on the shop floor - COVID hasn't really changed their day-to-day level of protection. Some of the keys to success are graduating from Foundry Education Foundation certified schools, but the odds are they are graduating from somewhere else.

The keys to success that are needed in most of the foundries I've walked through are:

- Leadership committed to being involved and useful
- An engaged, multi-generation workforce
- Investments in training from the top down and bottom up to stay current
- Simple process monitoring solutions
- Automation or semi-automation tools

Continued on next page

SIMPLE SOLUTIONS THAT WORK!

- Use of time compression technologies: CAD, CAM, Simulation, CNC, robotic work cells, and additive manufacturing
- Upgrades to equipment and process that reduce scrap, improve ergonomics, reduce regulatory liabilities, improve worker safety, health, and morale
- Injecting and maintaining useful new technology into the culture
- Willingness to network with foundry peers to stay current, and avoid pitfalls through shared experiences

This list is built by observing the foundries that are succeeding at bringing in new business, and weathering the storm, and contrasting them against those foundries and pattern shops whose doors were closed over the past couple years. It has been tempered by reading the back stories on industry obituaries I've circulated over the past couple years. The old foundrymen who built much of the American industry were not complacent. They were investors of energy, influence, and ingenuity as well as money.

So, as we write about "advanced manufacturing technology" and "Industry 4.0" we have to remember that these things are tools. Their stewards are the owners, employees and students who are the hearts and minds of the business. If you haven't bought in to developing human resources to research, select, install and optimize the tools available for the last couple decades, then you need to begin to invest in your future starting today! Included here is a small subset of the training resources that are available today, most of them can be delivered online.

Breakout box links: Places to go now, for online training resources:

[Foundry e-Learning | American Foundry Society \(afsinc.org\)](#)

[Robotics Training - United States \(ABB University\)](#)

[Additive Manufacturing Certification \(sme.org\)](#)

[Statistical Process Control \(SPC\) Training & Courses | ASQ](#)

[Getting Started on Reverse Engineering from Scan to CAD | GoMeasure3D](#)

[Industrial Training | Rockwell Automation](#)

[America Makes - National Additive Manufacturing Innovation Institute](#)

[NCDMM-National Center for Defense Manufacturing and Machining](#)

[NADCA - Educational Opportunities \(diecasting.org\)](#)

Depending on your location, local colleges have programs for training in many of the topics. There's also places like the Manufacturing Extension Partnership centers, and regional technical centers:

[Manufacturing Extension Partnership \(MEP\) | NIST](#)

[Home | Connecticut Center for Advanced Technology, Inc. \(ccat.us\)](#)

[Leadership Development Results That Matter | CCL | Learn More](#)

Wherever you are, there are training and enrichment topics available for whatever your company needs to grow, enhance efficiency, and make sure that your team and facilities are ready to adopt the next generation of advanced manufacturing technology. If you want the most out of manufacturing technology upgrades, get your leadership team to whiteboard a technology roadmap. Get everyone on the same page about what fits with your foundry vision and make someone responsible for onboarding each new technology platform. Begin today!



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