

# THE RECORD

Published by the National Tooling and Machining Association

## EMERGING LEADERS RISING 2021

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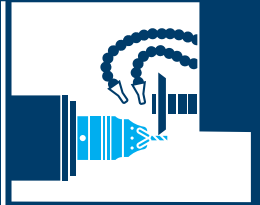
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## THE RECORD

### OPERATIONS & EDITORIAL

Roger Atkins, President  
Doug DeRose, Editor  
John Stevens, Editor

### ADVERTISING INQUIRIES

To advertise in The Record, or for information on publishing your corporate newsletter or sales literature, contact Kelly LaMarca at (216) 264-2837 or via email at [klamarca@ntma.org](mailto:klamarca@ntma.org) for advertising and editorial content.

### DESIGN & LAYOUT

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[www.bluebirdbranding.com](http://www.bluebirdbranding.com)

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### NTMA EXECUTIVE COMMITTEE

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*Modern Industries, Inc. – Phoenix, AZ*

Tom Sothard, External Board Member  
Debbie Holton, External Board Member



## What's Your Story?

### Send Us Your Story

Each issue of The Record will feature stories from members – and we want to hear from you. Send us stories of success, or those that fit the theme of the month's issue. The submission deadline is the first of the month prior to publication.

Contact Kelly LaMarca at [klamarca@ntma.org](mailto:klamarca@ntma.org).

### Upcoming Themes for The Record

#### August

Automation & Robotics ... Is the Time Now?

#### September

MFG Day 2021

#### October

Smart Manufacturing

## Upcoming NTMA National Events



### Emerging Leaders Conference

Wednesday, September 8 – Friday, September 10, 2021  
Phoenix, AZ



### Manufacturing Engage™ 2021

Tuesday, October 26 – Friday, October 29, 2021  
Old Alexandria, VA

**DATES AND LOCATIONS ARE SUBJECT TO CHANGE**



# PRESIDENT'S UPDATE

As we begin the second half of the year, we see the grip of the pandemic easing. NTMA members have addressed and realigned many operational and logistical areas in their companies as things improve. For many, sales have improved, and they see daylight ahead, while others continue to struggle as the industries they serve are not coming back as quickly. Regardless of where you are in that process, we all thought the only thing we had to overcome was the pandemic - only to find that we are now challenged with its ramifications: major supply chain disruptions, escalating prices and lack of availability of materials, and, to top it off, the need for workers.

This again proves that manufacturing is not for the faint of heart. Manufacturing is an industry of problem-solving, imagination, creativity, and overcoming. Whether making a complex machined part or overcoming industry downturns (planned and unplanned), we work in a challenging industry. For those of us who love what we do – we embrace the challenges as standard operating procedures while we marvel and focus on the complexity and intricacies of the end products we manufacture. We think about all the processes, the number of people who were a part of the process, the equipment required, and where the part may be used (or what for). Is the part going to Mars? Going in the airplanes we travel in? Into the operating rooms we, family, and friends may be in? Your automobile? The list could go on. The point is, what we do matters **yesterday, today and tomorrow.**

Focusing on “tomorrow,” we must think and focus on our next generation of leaders today. Do “we” have the vision to think about tomorrow’s leaders today? Do “they” have the vision to think about leading an industry tomorrow? We all must strive to find how to make these two visions work together today, so tomorrow is assured for all. At NTMA, I am so proud of those members who have combined those visions and made the transition of leadership – in addition, others who are in the process. Names like Ben Belzer, Andrea Wosel, Sam Griffith, Andrew Reinwald, Mark Sippy, and several others come to mind, all of whom have taken the reins and are our leaders of tomorrow.

I ask those of us who have been in the industry for most of our careers: do we have tomorrow’s leadership in place? Do we even have tomorrow’s leadership in our companies? Regardless of your answer, today is the time to start the process. Our job is to mentor and pass on the knowledge we have learned to tomorrow’s leaders – not letting them make the same mistakes we made along the way, but instead allowing them to make new mistakes as they lead our industry into the future.

What we do is fascinating, exhilarating, and rewarding. Let’s not talk to our next generation of Emerging Leaders about a “job” or “position” – rather, let’s talk to them about how fascinating it is to make parts that are used in sending people to space, saving lives in hospitals or helping our nation

during pandemics. Let’s talk about the exhilaration of watching the Mars landing and knowing parts you and your company made are on that mission. Let’s talk about our involvement in clean energy and electric vehicles. Let’s talk to them about the technology required to manufacture these critical parts for our country and the world.

Whether our next Emerging Leaders are 10, 20, 30 or even 40 years old, let’s mentor them, encourage them and guide them to see the future of our industry, becoming the leaders of creating and making the things of tomorrow. **It is MANUFACTURING’S TIME:** let’s make sure we do our part in developing the next generation of leaders.

As President of NTMA, I am so proud to have many Emerging Leaders coming up, and I look forward to their leadership and stewardship of our industry and our association. Always knowing that as an NTMA Community, **“We Are Stronger Together.”**

Roger Atkins, President – NTMA



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Image courtesy of McDowell Machine Tools



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The TNC 640 from HEIDENHAIN: for the first time, milling and turning are combined in one TNC. Now users can switch as desired between milling and turning—within the same NC program. Switchover is independent of the machine kinematics. It automatically takes the respective operating mode into account and without any additional action.

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Helping Fill the Skills Gap



# NTMA Mechanical Aptitude Test

A powerful tool to help you identify and hire the right people for the role.

NTMA's Mechanical Aptitude Test was developed in consultation with industry experts to assess the understanding of basic mechanical principles, along with the applications of those principles to everyday shop situations. The test is a great tool to assess applicants who may have limited experience, but have the capacity to pick up on-the-job training and learn the position quickly!

Test Sections include Mechanical and Spatial Relations, Mechanical Reasoning, Applied Mathematics and Theoretical Reasoning

For more information, visit <https://ntma.org/programs/workforce-development/mechanical-aptitude-test>.



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# New Member Highlights

**ATHENA MANUFACTURING**  
Houston Chapter Member



Athena Manufacturing, LP was founded in Austin, Texas on November 1, 2020 by Bill Johnson and John Newman. Johnson, a mechanical engineer, serves as President alongside Newman, a CPA, serving as CFO. Athena is a full-service machining and fabricating factory with an AS9100D quality system. The company also offers vapor degreasing, powder and liquid coating, silkscreen and numerous assembly options including cleanroom operations.

Machine listing and factory capabilities are found at [www.athenamfg.com](http://www.athenamfg.com). The company operates seven days a week and has 250 employees (as of May 2021). The company provides services to the semiconductor capital equipment industry, aerospace and defense, and other industries.

Athena Manufacturing, LP  
15900 Bratton Lane  
Austin TX 78728 USA

[www.athenamfg.com](http://www.athenamfg.com)

**AXIS ENGINEERING**  
Western Lake Erie Chapter Member



Established in 1998 and located in Dundee, Michigan, Axis Engineering specializes in automotive progressive die design and build. Additional competencies including: fixture design and build, component and assembly prototyping, flat and 5-axis laser cutting, CMM inspections and certifications, white light scanning, reverse engineering, low-volume production, die refurbishment, emergency repair and onsite tooling support.

Axis Engineering currently operates with two shifts and 46 employees. The onsite machine shop utilizes seven vertical CNC's, two 5-axis CNC's, two-wire EDM machines and a host of standard shop equipment. The tool tryout area boasts ten stamping presses of varying tonnages including an 800-ton press with a hot stamp trial furnace.

Axis Engineering  
5461 Circle Seven Drive  
Dundee, MI

**FOUR RIVERS CAREER CENTER**  
Education Member



Four Rivers Career Center is located in Washington, Missouri. They are proud to have just graduated their 54th class. The Center began with only seven programs which have now grown into 17 programs. They provide programs to ten (10) high schools as well as East Central College located in Union, Missouri. Four Rivers Career Center attendance is rapidly growing, and they service over 700 students per year. Each program works closely with industry partners to best meet the needs of each career field. Four Rivers Career Center offers a youth registered apprenticeship program and currently has over thirty apprentices.

Four Rivers Career Center  
1978 Image Drive  
Washington, MO. 63090

[www.frcc.washington.k12.mo.us](http://www.frcc.washington.k12.mo.us)

**JARVIS MACHINE**  
Boston Chapter Member



For more than a decade, Jarvis Machine has provided high-quality, custom machined parts. They utilize state-of-the-art technology to create a wide variety of parts, including those with a high degree of complexity and extremely tight tolerances. Their attention to detail, superior quality control, and rapid turnaround time have set them apart from the competition. Jarvis Machine is constantly expanding its capabilities to meet the growing needs of its customers.

Commitment to precision and attention to fine detail has resulted in strong growth. In 2017, Jarvis Machine moved into a new 6,000 sq. ft. facility. Their mission is to provide the highest quality small, to medium-sized parts, at the most competitive price with on-time delivery. Jarvis Machine offers personalized service and prides itself on customer satisfaction. The company's manufacturing facility is located in Claremont, New Hampshire and is equipped with high-quality CNC equipment.

Jarvis Machine  
13 Bowen Street  
Claremont, NH 03743

[www.jarvismachine.com](http://www.jarvismachine.com)



**R&R RUBBER MOLDING, INC.**  
**Los Angeles Chapter Member**



R&R Rubber Molding, Inc. is a custom contract manufacturer of elastomeric sealing devices to customer design and specification. They serve a wide range of markets, including aerospace, automotive, medical, defense, and transportation. The client list covers A through Z, as elastomeric seals are what supports the pillars of their modern world. When Dick Norman, Patricia Norman and I opened our doors in January 1977, Dick had 48 years in the industry, starting third shift in 1948, and learning and working his way up through several major areas of rubber parts manufacturing.

Now 44 years later they are proud to carry on their efforts. I recall Dad showing me the ropes: preparation, press, trim, inspect, packing, then to stand in line to ship via UPS. Mom kept the books and acted as referee.

Our bread-and-butter jobs seem to materialize and stay with us, many accounts still ordering from our fourth mold, or 204th now up to more than 6,700 molds used to date.

Some jobs are one-piece and done, others have exceeded 80 million pieces over 20 years with four generations of tooling upgrades. Always interesting, never boring, what happens next has consistently been challenging, yet also rewarding. I think if you cut me, I'd bleed rubber."

R&R Rubber Molding, Inc.  
2444 Loma Ave.  
South El Monte, CA 91733

[www.rrrubber.com](http://www.rrrubber.com)

## NTMA Welcomes Its Newest National Associate Member: ProShop ERP

ProShop ERP is the industry's only shop management software specifically dedicated to and built-in, an aerospace contract manufacturer in the Pacific Northwest.

ProShop is fanatical about managing every detail of your shop in a paperless and web-based environment, including the ERP functions necessary to run your office, the QMS functions to manage your AS9100 system, and the MES functions to ensure your shop floor is running at peak efficiency. From managing visual work instructions, document control, job-

routings, cutting tools, AS9102 FAI and In-process inspection, NCR generation, calibration, machine utilization, job-costing, and much more, it's all in ProShop and completely interconnected to every corner of your business.

# PROSHOP

Learn more about ProShop at:  
[www.proshoperp.com](http://www.proshoperp.com)

## One Voice: Federal Government Advocacy Program

The manufacturing industry continues to navigate the unique challenges and changes brought on by the last year – and it remains important to have a partner in advocacy. NTMA continues to work closely with the team at One Voice: the combined federal government advocacy program representing small-and medium-sized business manufacturing in America.

In addition to providing guidance on COVID-19 regulations and uncertainties, One Voice has a wealth of fantastic resources, developed to help keep your shop informed and prepared for whatever comes next. This has included virtual bi-weekly webinars, news releases, educational materials, and the Talking with One Voice Podcast.



**Two  
Minutes  
WITH  
One Voice**



Now, you can also receive a concise explanation of everything going on in Washington, D.C. with "Two Minutes With Voice," a bite-size weekly video hosted by various members of The Franklin Partnership and the Policy Resolution Group at Bracewell LLP. Each episode is uploaded to the NTMA YouTube channel – and shared through our social channels.

We hope you continue to utilize this key partner in One Voice – one that ensures that millions of manufacturers across the country have their voices heard.

*Please visit [www.metalworkingadvocate.org](http://www.metalworkingadvocate.org) for more information.*

October 26-29, 2021 - Old Alexandria, VA

# CONNECT WITH YOUR INDUSTRY PEERS **IN PERSON**

THE PRECISION MANUFACTURING CONFERENCE

# ENGAGE™ 2021

POWERED BY 

**Engage 2021** will build on NTMA's long legacy of providing precision manufacturers and industry leaders with the invaluable experience of gathering together to network, learn and advocate for the advancement and future of the industry.

*“Engage is an amazing opportunity to learn tools and techniques for improving my business. I am able to glean many ideas from the speakers and through networking that I can come back and implement.”*

- Matt Wardle, President - JD Machine

We hope you'll join us for a true, in-person event, for exciting ways to **Engage** with the nation's largest network of Precision Manufacturers.

[www.manufacturingengage.org](http://www.manufacturingengage.org)

## PRICING

### Early Bird Rates:

- Member: \$1,195
- First-Time Attendee/EL Rising Recipient from 2020 & 2021: \$995
- Spouses: \$795
- Non-Member: \$1,395

**Early Bird Deadline is Wednesday, September 29th**

### Standard Rates:

- Member: \$1,395
- Spouses: \$895
- Non-Member: \$1,795

For more information contact Kristen Hrusch: [khrusch@ntma.org](mailto:khrusch@ntma.org)

For sponsorship opportunities contact Kelly LaMarca: [klamarca@ntma.org](mailto:klamarca@ntma.org)

## Opening Keynote Digital Twins in Manufacturing: Driving Manufacturing 4.0

Dr. Michael Grieves will describe the Digital Twin as an early 21st-century concept that has evolved in scale and scope to impact all of today's manufacturing organizations. Dr. Grieves will discuss the characteristics that enable the Digital Twin to drive smart manufacturing or, as it is commonly called, Manufacturing 4.0. As important as the present state, Dr. Grieves will share his vision of the impact Digital Twins will have on the manufacturing floor of the near future.

Dr. Grieves is an internationally renowned expert in Product Lifecycle Management (PLM) and originated the concept of the Digital Twin. His focus is on virtual product development, engineering, systems engineering and complex systems, manufacturing, especially additive manufacturing, and operational sustainment.



**Dr. Michael Grieves**

He has consulted and/or done research at some of the top global organizations, including NASA, Boeing, Newport News Shipbuilding, and General Motors. Dr. Grieves is currently at the Florida Institute of Technology in Melbourne as Chief Scientist of Advanced Manufacturing.

He is also Executive Director of the Digital Twin Institute, bringing over four decades of extensive executive and deep technical experience in both global and entrepreneurial technology and manufacturing companies.

## HOTEL INFORMATION



### **The Westin Alexandria Old Town**

400 Courthouse Square  
Alexandria, VA 22314

**Negotiated Group Rate:** \$215 per night  
**Hotel Cutoff Date is Wednesday, September 29th.**

#### **To make a reservation:**

Follow this [Link](#) or call (703) 253-8600 and reference Engage 2021.

**\*Rooms are based on availability or until the block is full**

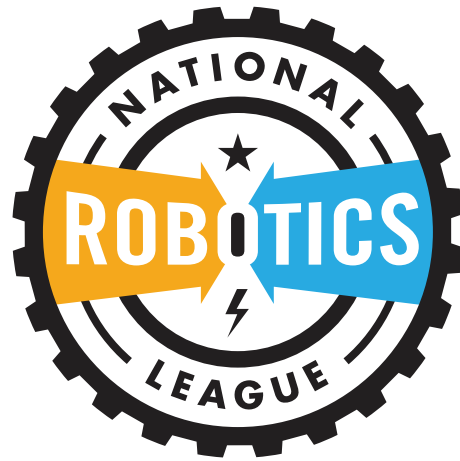
*Contact Kristen Hrusch ([khrusch@ntma.org](mailto:khrusch@ntma.org)) for more information.*

## NRL Back in Action – Robotics Events Return to the Cage in Spring and Summer

After a year in which we were faced with great challenges and change, finally, one of the most imaginative and effective ways our future workforce can be engaged made its return!

Starting on the weekend of April 23rd, multiple NRL events were held for the first time in over twelve months, sponsored through area NTMA Chapters and Members. High school robotics team competitions were held through AWT Robobots (Northeastern Ohio), BotsKC (Kansas City) and the NWPA NTMA RoboBOTS (Northwestern Pennsylvania) – all a rousing success, with students learning through full contact innovation!

Check out some of the highlights from the most recent NRL competitions – and keep an eye out locally for more upcoming events!



**FULL CONTACT INNOVATION**



AWT ROBOTS



NWPA NTMA RoboBOTS



BOTS KC



NTMA NWPA RoboBOTS Coolest Bot and Royal Rumble Winner: Safety Cone, General McLane High School



# AEROSPACE TO THE CORE

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Ti6Al-4V structural aerospace component machining with consistent tool life of one hour or more. Helical milling innovation with 8 cutting edges per insert, removing 20 cubic inches of material per minute. HARVI™ Ultra 8X is aerospace to the core.

# Emerging Leaders Rising

## 2021 Recipients

**EL Rising is NTMA's recognition of talented manufacturing professionals who show leadership promise for the future of our industry. Now in its third year, the 2021 recipients are invited to attend the 2021 Emerging Leaders Conference, where they can continue to grow and learn in this great profession; as well as to attend Manufacturing Engage 2021, where they will be recognized for this achievement.**



### **Bryan Cole**

**Southern Manufacturing Technologies**

#### **Reason:**

Bryan began his career at SMT seven years ago as a CNC Machinist with experience in multi-axis vertical machining and inspection. During his time at SMT, Bryan has been trained in Solidworks and Esprit CAD/CAM. Using this knowledge, Bryan has transitioned into Manufacturing Engineering and now creates complex processes including solid modeling, operation drawings and CNC programs. A quote from Bryan: "I look forward to sharing my experiences and knowledge both with current and new employees to help our team move forward." Bryan is an exemplary employee and has become a true Emerging Leader at SMT.



### **Bryan Gallo**

**Southern Manufacturing Technologies**

#### **Reason:**

Bryan began his career at SMT while still in East Lake High School's Engineering Academy. Starting with no experience, Bryan learned machining from the ground-up by working in our CNC Horizontal Machining Cell progressing from Operator to Set Up to the Cell Leader. In the last couple of years, Bryan has transitioned into Manufacturing Engineering, learning Solidworks and Esprit CAD/CAM. Bryan has become a true Emerging Leader at SMT with a bright future. He is a testament to NTMA companies engaging with school programs, exposing young people to careers in manufacturing and then providing career paths for them.



### **John Jackopsic**

**United Gear & Machine Company**

#### **Reason:**

John started with United Gear in the middle of the COVID-19 pandemic. With no prior manufacturing experience, his natural intelligence and inquisitiveness have made him an essential part of our team. He is never afraid to ask a question and has quickly amassed a wealth of knowledge on how a shop floor and business runs, as well as on the manufacturing process. He brings a cool, calm and collected energy to an otherwise often hectic job shop atmosphere. He is purposeful, thoughtful and thorough in scheduling and customer communications.





**Jim Leach**  
**Wagner Machine, Inc.**  
**Reason:**

Jim has been a machinist running mills. He took initiative to start mentoring and leading others within the shop and gradually took on more responsibility without even realizing it. Jim now runs one building with five machinists and is a customer relationship manager with four different customers. He handles hiring for machinists and company evaluations. He is always willing to learn and his ethics are top rate. He is a unicorn, and we are blessed to have him as an Emerging Leader on Team Wagner.



**Chelsea Marsden**  
**Focused on Machining**  
**Reason:**

Chelsea has quickly come into the company and asserted herself as a new manager and a resource for all employees. She's learned our ERP system, processes, and manufacturing in general in a short time frame to allow her to be a resource to all people in the company. After three months on the job, she developed an amazing onboarding checklist and pushed our management team to develop welcome videos. Feedback has insisted that the onboarding process is like nothing our employees have ever experienced.



**Christopher Musco**  
**United Gear & Machine Company**  
**Reason:**

Chris's eagerness to learn sets him apart and ahead. He joined United Gear with eight years of experience in manufacturing, but without any real gear knowledge. He devours specs, pushes himself to learn more and in the past two years has made himself a gear expert. Our quality department is all the better for having him here - he has streamlined procedures and worked with all the guys to elevate the quality of our work.



# Emerging Leaders Rising *cont ...*

## 2021 Recipients



**Garrett Ross**  
**Focused on Machining**  
**Reason:**

Garrett continues to be a strong leader within the company. He has completely taken ownership of the production scheduling, mill quoting, and most of the programming for the mill department. In 2020, Garrett single-handedly supervised and managed the installation of our new automated horizontal machining center. Due to his efforts ... FOM is achieving two to eight hours per night of lights out unattended production, which further helped FOM achieve a 41% growth rate in 2020. His dedication to the team and FOM is why we continue to grow and have so much success.



**David Roux**  
**Boston Centerless**  
**Reason:**

Dave, within his first year with the company, has demonstrated our Core Values from the first day he came on board and has established himself as an Emerging Leader at Boston Centerless. As a new employee, he immediately demonstrated his ability to meet aggressive deadlines on new processes and many improvement projects. He assured compliance with certifications and has been instrumental in troubleshooting and implementing new equipment. Dave never fails to assist wherever and whenever needed in other areas of the shop. He has become an expert on our products and processes and has demonstrated leadership skills and a demeanor that will allow him to take on more of a leadership role as we continue to expand.



**Trey Seddon**  
**Global Shop Solutions**  
**Reason:**

Trey joined Global Shop Solutions three days after graduating from Sam Houston State University with a B.A. in Computer Science, and since then has exceeded expectations in every way – from his software development prowess to how he goes above and beyond to serve customers. In addition to his normal duties, Trey has also been a valuable asset to the company through training new Continuous Improvement Team employees to ensure they establish the best programming practices. Trey is known throughout Global Shop Solutions as a consummate team player and creative problem solver. What sets Trey apart is his ability to see the big picture when designing new programs – he not only builds a program that meets the customer's core requirements but also offers the best overall solution and consistently exceeds customer expectations.







**Zach Young**  
**Southern Machine Works, Inc.**  
**Reason:**

In the short time that Zach has been with the company, he has been deeply involved in the implementation of a completely new MEP, ERP and QMS systems. Zach's detailed knowledge of both ERP systems has allowed him to be more involved in supporting the estimating department. Additionally, Zach is leading the charge in transitioning the Company's CUI compliance to the significantly more exhaustive Office of the Under Secretary of Defense for Acquisition & Sustainment Cybersecurity Maturity Model Certification. Through his earnest efforts, the company is confident it will be able to continue to serve the Defense Industrial Base sector for many years to come.



**Jason Wilkins**  
**Betar, Inc.**  
**Reason:**

Jason started with Betar in July 2019, transitioning out of a 20+ year career in Hospitality and aggressively took on learning our business with professionalism and a smile on his face. In January 2021, we began working on our AS9100 Aerospace certification. Jason took on a leadership role that has put Betar on track for completion by the end of summer and without him, this never would have happened.



## Talking With An Emerging Leader – Andrea Wosel

Andrea (Wosel) Coiner is President C&R Manufacturing in Shawnee, Kansas. She has been with the company for over 12 years and is part of NTMA's Emerging Leaders. Andrea sat down with Caitlin Sickles, NTMA's communications consultant, to discuss her career path and how having she finds success by working closely with talented people inside and outside of her company.

### **NTMA: What brought you to manufacturing and why did you decide to make it your career?**

**AW:** My father started the company in his basement right around the time I was born. So, I have been around manufacturing my whole life. In fact, he had a couple of employees back then, and they used to have to take a break and shut the machines down for a quiet time for my brother and me to take naps. Probably like a lot of other people, though, I was never really encouraged by teachers and school counselors to pursue manufacturing as a career path. It wasn't really presented as an option. Which is unfortunate. So, I went to Kansas State University, and I worked in the science field for a while and then the HR field for a while. But when the recession hit, a lot of companies took a downturn. At that time I decided to get my MBA while working part-time at C&R. That's when I realized that manufacturing was a really good field to be in because, while it took a hit as well, it stayed stronger than a lot of other industries. I realized that manufacturing has very important jobs and that it's a vital part of our economy, even though you may not hear much about it. So, I was appreciating the industry and enjoyed applying my course work to the business, and that's really how I got started.

### **NTMA: You mentioned the recession and the strength of manufacturing. That's similar to what we've all just gone through with the COVID-19 pandemic, another time that manufacturing really stayed strong.**

**AW:** Yes, last year was a great example of why manufacturing is a great sector to be in. We were deemed "essential" and that really says it all. We were the ones who stayed open during this last year when a lot of businesses shut down. Last year showed that this country literally cannot operate without the manufacturing industry. The current situation of global shortages really illustrates the need for American manufacturing.

### **NTMA: Talk about how you went from being part-time to leading the company. Obviously, that did not happen overnight.**

**AW:** No, it definitely was not overnight. I started out doing just data entry, set up sheets which was really the beginning of my manufacturing education where I learned a lot of terminology and processes. At the same time, my MBA helped me look at things from a high level and understand more of the operations of the company. Two things stood out. First, I really enjoyed the atmosphere of constant improvement. The industry was changing all the time and there were always opportunities to make things better. And another thing that really drew me in, was the small business culture. It's not just an individual effort that you're making here. It's really a team effort. We have really good people, some who have stayed twenty or thirty, even forty years.

### **NTMA: Let's talk about that atmosphere of constant improvement. What do you mean by that?**

**AW:** Well, in this industry, if you're not changing and moving forward, you will get left behind. Obviously, we're not making parts on manual mills and lathes like we did fifty years ago. There's new technology, there's new equipment and process improvements all the time. Taking advantage of those and watching your shop become more efficient is really rewarding. We are working on new projects all the time. Even our long-term customers are frequently coming to us with new parts, and we are participating in design consultations on the new products. It keeps the job interesting.

### **NTMA: Research shows that young people, in particular, are interested in the kind of fast-paced, always changing atmosphere that you're describing. Do you try to show that side of manufacturing to help recruit the next generation of skilled workers?**

**AW:** That is a personal goal for me. We've worked with Prep KC, which is a program in our area that puts on career exploration days in high school and middle schools. And, the Bots KC program through NTMA has been huge for us. We've sponsored a few teams and working one-on-one with the kids has been really impactful. They can see manufacturing up close, and see that people who work here have the ability to do something different every day, and have autonomy



over their own jobs. It's been a great experience for everyone, bringing these kids in and working on their robots with them.

### **NTMA: As we think about recruitment, we all know that there is a gender imbalance in manufacturing. You are a woman leader in manufacturing. What's that like?**

**AW:** There is room for improvement in manufacturing. But, more women are getting involved in the industry. When I go to the community college programs, I am seeing more women sign up for those classes. So, we're seeing good progress. For myself, and for other women already in the industry, I think doing that outreach, and making yourself visible is important for lowering barriers for young women.

### **NTMA: Let's talk about the value for you of trade associations like NTMA.**

**AW:** Anyone in my family will tell you that belonging to trade associations has really been a key part of our success. My father has been involved with NTMA since about the time that he started the company. I think I went to my first conference when I was three years old. Then, I got involved with the local next-gen team when I first started at the company, and it was immediately valuable to sit down and talk with people in my same position. Most companies have similar challenges, and everybody has a different way of tackling them. To hear unique and creative ways that that companies have found to take on those challenges has always brought a lot of value.

The way I look at it, if you are spending all your time in the office, the only perspective you're ever really getting is your own. You have to open your mind to other viewpoints out there. Some people think they can't afford the time off that going to a conference requires. But, really, you can't afford not to. You have to step back and look at the bigger picture of where you're going with your business.



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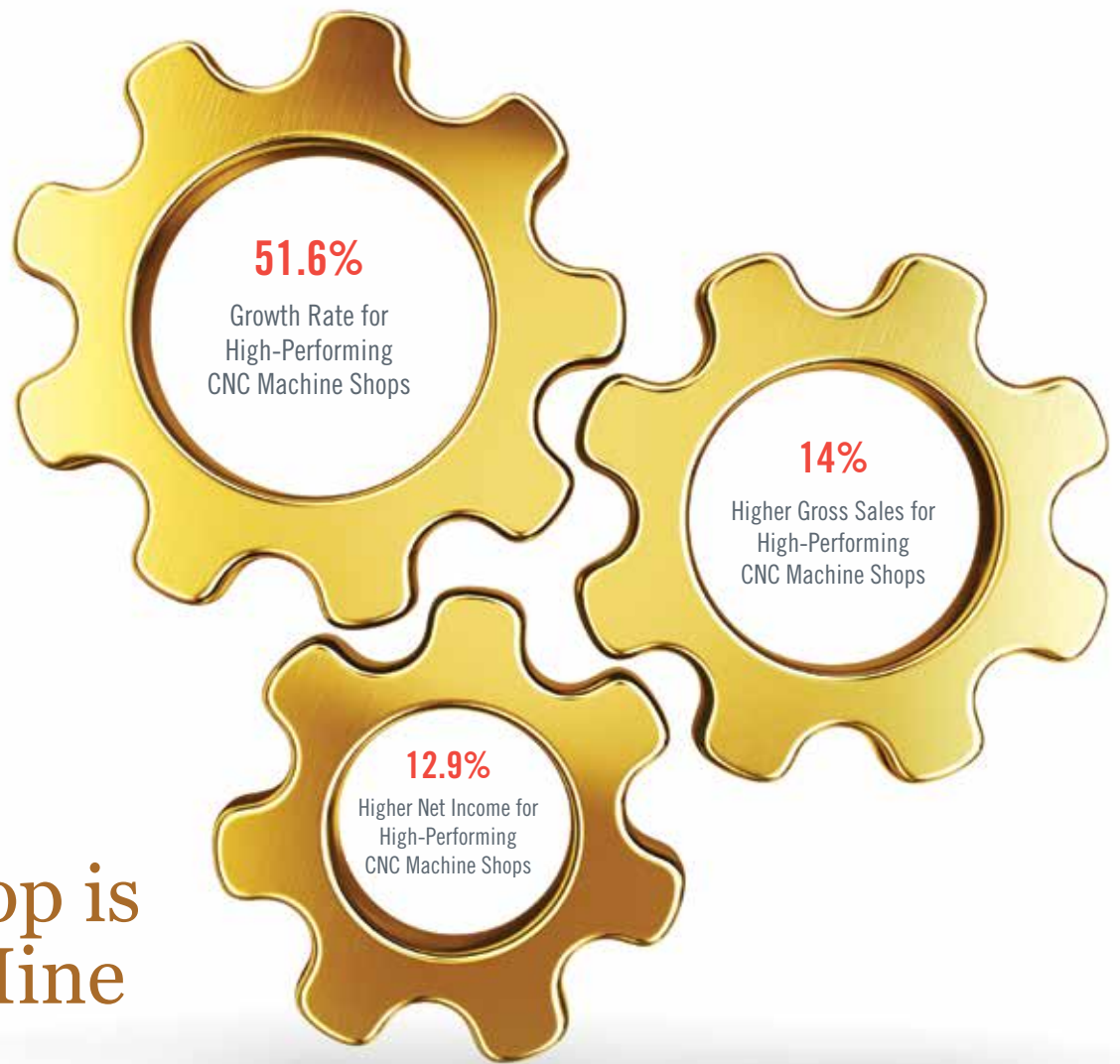
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## Your Shop is a Gold Mine

By Michael Watkins, MBA/JD, EBITDA Growth Systems

There are many coaches and mentors available to small-to-medium business (SMB) owners that have owned, worked in, engaged with and/or analyzed tens of hundreds of businesses. As a result of their “travels,” most would feel safe in stating that (there is a very high likelihood) that if you own a machine shop, it is probably a gold mine. If your shop is currently producing quality parts, on time, at a profit, then you know exactly what I mean. If your shop is misfiring on one or more of these – quality, schedule, or price – then fix the one(s) that are broken so that you can experience all that is in store for your business.

Of course, the SMB owner that is struggling to generate and/or maintain profitability would either ask – “how do I determine which one(s) are broken?”; or ask – “how do I fix the one(s) that I know are broken?” In either case, a fairly useful answer would be to find a specialist who understands your customer and understands your industry. Find a specialist who

is already familiar with most of the mistakes. Either they will have made them personally or they will have experienced them through their clients. The point is, they are familiar, so they can save you the time and money associated with failed plans and strategies.

To be clear, gold isn’t typically lying around on the surface. One must pan for it (if they want a little) or mine for it (if they want a lot). In the same way, the “gold” that is contained in your business isn’t lying around on the shop floor. One must work for it. And one must work for it using the right tools. That having been said, any machine shop is capable of generating a lot of revenue and a lot of profits. Gartner Research recently completed an in-depth study of CNC machine shops and discovered that even fair to middling machine shops averaged growth rates of 25.1%!

The Gardner Research also provided insight into what separates high-performance shops – those that excel

at income, profit, and growth – from average ones. The study found that the characteristics of higher-performing CNC machine shops included gross sales that were 14% higher than other shops, and net income of 12.9% versus 5.9%. Moreover, the average growth rate for high-performing CNC machine shops was 51.6%! There is gold in those hills! Most SMB owners just need a capable guide to help them find it.

Your mission is to find a firm that can determine “which one(s) are broken,” and is capable of prescribing a strategy to fix them. This is the key to finding the proverbial gold – profits. These firms have developed tools and approaches that have been vetted through experience to work in our industry. Firms like yours should avail themselves of these tools so that the mining is easier and much more fruitful.

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## NTMA SERVICE AWARDS 2021

### NOW ACCEPTING NOMINATIONS

The Service Awards are given out each year at the Manufacturing Engage Conference. We need your help finding the best candidates for these awards.

**Award categories are:**

### MEMBER AWARDS

#### HONOR AWARD

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Nominate a member for continuing meritorious service and dedication to the industry and/or the Association by a regular member; traditionally awarded for longevity of service in dedication, as opposed to a single act or service in a short-time industry or Association position.

#### L.A. SOMMER MEMORIAL AWARD

---

For outstanding and continuing service of the highest magnitude; emphasis is placed on service to the Association by a regular member, both of the highest order and over a period of time, connoting excellence in a particular role in NTMA, rather than as a participant in a single event.

#### WILLIAM E. HARDMAN AWARD FOR EXCELLENCE IN TRAINING

---

For a company or individual (regular member or education member) which consistently demonstrated strong support and active participation in structured training for the precision custom manufacturing industry.

### NON-MEMBER AWARD

#### DISTINGUISHED SERVICE AWARD

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For outstanding service to the industry by a person outside the NTMA regular member companies.

Help us recognize deserving individuals and/or companies that have supported and advanced the industry and the Association.

**Submit your nomination(s) by August 11, 2021**

**For a nomination form, contact Linda Warner at [lwarner@ntma.org](mailto:lwarner@ntma.org)**

# Short-Term vs Long-Term Investments

By Bill Padnos, Executive Director, AMPED & National Tooling & Machining Foundation

Beaumont Student

In the ongoing battle for survival and profitability in the manufacturing business, shops are looking to invest in technology that will be able to do more than one operation with less direct labor – to produce more consistent, higher quality parts and help reduce the cost per piece produced. The need to understand how to invest profitably and wisely is urgent if you want to stay competitive. Buying new technology is a strategic decision to assure the future competitiveness of your company which it is wise to evaluate it properly and thoroughly.

Having a good understanding of the financial impact of the investment, by calculating its short-and-long-term returns is important. You look at a detailed piece-cost analysis to compare competing equipment, and understanding the overwhelming importance of productivity. The truth about ROI: it is important to take a comprehensive look at all aspects of an investment when you are comparing machines.

However, when you look to invest in the most critical part of your business, human capital, it cannot be calculated the same way. Investing in your incumbent and future workforce is a short-term and long-term project that needs to be a part of your company's strategic plan. Right now, there are over 800,000 open positions in manufacturing, with an estimated 2.1 million open positions by 2030. While some of the current open positions are due to the pandemic, the openings have only added to the overall skill gap problem. Prior to when COVID-19 entering our lives, 97% of NTMA members reported that they had at least one skilled open position.

The immediate answer to fill an open position is to find an experienced machinist in your community who is not 100% satisfied in their current job and offer him/her more money to come to your shop. However, you never know if that new hire will be willing to

leave for another shop because they are willing to pay more than you. Or worse, if your actions create a bidding war for all employees in the area – in which the ultimate winner will always be the large OEM with their deeper pockets.

As a manufacturer, you are experts in making parts and building skills in your incumbent workers. You need to have the same mentality when it comes to your future workforce. This is why I am proposing that you look toward implementing a joint short-term/long-term strategy. Right now, you probably have open skilled positions, but by 2030, that number will grow to 10-20 openings. Therefore, it is important to invest your time in building a great ground game now that will pay dividends today, tomorrow and in the future. According to the Harbor Freight Tools for Schools and JFF research report, there are more than 7,000 high school advanced manufacturing programs across the United States. I included this report because it is a great spotlight the current state of skilled trade education in US high schools.

Within those CTE programs across the country, only 159,000 secondary students have a manufacturing concentration out of 3.9 million total in 2018/19. In fact, according to the National Center for Education statics only 7.7% of public high school graduates had earned one credit in manufacturing and technology, and only 1.1% have at least three credits. This is why you need to first research which schools in your community have manufacturing technology education programs and who are the instructors for those courses. Summer, ahead of the back-to-school season, is an ideal time to reach out to the educators of those programs. It's easier for school administrators and educators to consider partnership initiatives toward the beginning of the academic year than once classes start.

Schools are frequently able to give back to businesses in other ways as well. Accessing research and talent while further connecting with the community is as close to a win-win as you will find. Businesses that support schools give their employees a perfect outlet for volunteer work. Providing internships to local college or university students can create a valuable supply of future workers. Tapping into this corporate social responsibility is crucial in positioning your company with customers and against the competition.

**Here are a few ideas you can execute right now to get started.**

- *Donate to school development or provide supplies.*
- *Reach out to local educator groups – online or in-person.*
- *Research your local manufacturing education scene.*
- *Invite educators and classes in for tours (if possible).*
- *Look for mentorship and volunteering opportunities in your area.*

As we look towards the manufacturing leaders of tomorrow, the time to find them and foster them is now. While manufacturers have a fiscal responsibility to stay on top of technology, they must, at the same time, work to mentor that future workforce. Many young people today are starving for that mentorship – and you never know what future professional you can have an impact on by giving of your time and expertise.

*Investment in your future workforce can be one of the most profitable ventures your company can engage in – and can continue to be so for a very long time.*

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for more details.**

# Back to HR Basics

By Stephen Maule, McMahon Berger, P.C.

Hip Hip Hooray! Businesses are opening up and employees are returning to work at various locations across the U.S. Government regulators are loosening restrictions that have been in place for well over a year, allowing people to get together for meetings, in-person sales calls, and other gatherings. Now is a perfect time to review your company's basic human resources functions to ensure employees are mindful not only of any new rules that may be put into place, but also to remind them of policies and practices they may have lost sight of while they were away.

To accomplish this goal, implement an HR Audit checklist of your essential documents, guidelines and practices. Such a checklist can prove invaluable to speed the process along while ensuring all necessary areas are reviewed. HR Audit checklists frequently address the following subjects:

## Essential Document Review

While most HR documents likely have been updated throughout the course of the past several months, companies are advised to review these documents to ensure any new legal requirements that have been implemented are included. For example, has your state or local government entity added a new protected classification to their discrimination laws? If so, you should then revise the EEO statement set forth in your application and/or employee handbook. What about states that have implemented so-called "ban-the-box" legislation or legalized medical marijuana? Do your application and drug policy comply?

Documents to be included in this aspect of your review would include: recruitment advertisements; employment application; background check documentation; employee interview forms; employee handbook; internal HR policies; offer letter; job descriptions; employee code of conduct (to the extent it is not set forth in the handbook); disciplinary

forms; and performance review documents. While by no means an exhaustive list, these essential HR documents should be part of a periodic review to ensure compliance with ever-changing employment and labor laws.

## Wage and Hour Compliance

Compensating employees properly should always be at the top of any company's priorities. Liability resulting from improper pay practices frequently meets and exceeds six figures, once liquidated damages and attorneys' fees are included.

To minimize the risk of potential claims, employers should conduct a thorough review of their pay structure to ensure compliance with recently enacted minimum wage laws, overtime requirements, possible misclassification issues (employee vs. independent contractor), and equal pay obligations. Such is particularly important given the current administration's clearly expressed intent to focus on compliance with these areas. In addition, employers should review any existing employment contracts they may have with current employees or they intend to use with new employees.

## Benefits and Leave Documents

During the pandemic, both federal and state governments enacted various laws to provide leave (paid and unpaid) to employees who previously would not have been eligible for such leave. Employers should review the requirements of their geographic area to make sure they are compliant, not only in the short-term, but also in the long run as certain recently enacted leave laws may continue beyond the pandemic's conclusion.

In addition, employers must review current benefit documents and practices on a regular basis.

Revisions to ERISA regulations and health care reform legislation require constant monitoring to prevent employers from being held responsible for employee claims due to a lack of compliance.

## Required Notices and Posters

One of the most basic, but frequently overlooked, aspects of employment and labor law is the requirement to post federal, state and local notices and posters. These posting obligations arise from various sources, such as discrimination laws, wage and hour compliance, safety regulations, immigration obligations, and so on. Now that workers are coming back to the facility, it is critical to make sure all required notices are posted at the necessary locations. Further, to the extent employees work remotely, electronic notification of these posters should be provided.

## Training

As most employment lawyers will advise, periodic management and employee training are essential to building a good defense against potential lawsuits. For example, have your managers and supervisors been trained properly on the company's harassment policies? If not, the potential for liability may increase if a claim is filed. In addition, regular employee training minimizes the risk of employers being accused of discrimination with respect to policy administration and enforcement. Now that employees are returning to the workplace, it is the perfect time to conduct such training.

The foregoing discussion addresses numerous areas that should be every company's focus when conducting an HR audit. Additional areas of review may be necessary depending on your organization's particular circumstances.



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NTMA

# EMERGING LEADERS CONFERENCE

September 8-10 – Phoenix, AZ



**Pete Honsberger**  
Conference Emcee



**Dave Capkovitz**



**Omar Nashashibi**



**Darrin Schenck**



**Mike Watkins**

## Hotel Information

### Kimpton Palomar Phoenix

1301 Wyandotte St, Phoenix, AZ 85004

Group Rate: \$159+ per night

\*There is a \$10 resort fee per night - guests will receive that back as a \$10 food & drink credit

To make your reservation: Call 1-800-Kimpton and reference NTMA Emerging Leaders or Book Online.

**Room reservations must be made by Tuesday, August 17th.**

## Pricing Details

**NTMA Member: \$395 / Non-NTMA Member: \$495**

**Every conference registration includes the following:**

- All educational sessions and networking breaks
- Welcome Reception on Wednesday
- Breakfast on Thursday and Friday
- Lunch on Thursday
- Plant Tour
- Evening activity and dinner on Thursday

## Agenda

### Wednesday, September 8

**Registration: 1:00 PM-3:00 P**

**General Session 1: 3:00 PM-4:00 PM**

#### *High Performing Teams*

Dave Capkovitz, Principal - EBITDA Growth Systems

Mike Watkins, Principal - EBITDA Growth Systems

Want to know how to create a high-performing team that will maximize customer satisfaction, employee engagement and bottom-line profitability?

**This session will:**

- Describe the characteristics of high performing teams
- Recognize how to improve individual and group productivity
- Describe the team-building process (Forming, Storming, Norming, Performing)
- Recognize the need to manage the individual differences within the team

**Campfire Chats: 4:00 PM-6:00 PM**

Your chance to sit down in a small group setting and discuss the following topics peer to peer:

- Managing Up
- Change Management
- Conflict Resolution
- Working with a Multigenerational Staff
- Time Management Strategies
- Strategies for Cash Flow

**Welcome Reception: 6:30 PM-7:30 PM**

**Thursday, September 9**

**Breakfast & Registration: 8:00 AM-9:00 AM**

**General Session 2: 9:00 AM-10:00 AM**

***Effectively Analyzing and Communicating Complicated Issue***

Omar Nashashibi, Founding Partner - The Franklin Partnership

Effectively communicating complicated issues in the workplace, politics, or our personal lives in today's polarized environment is critical, especially when discussing complicated topics. Omar S. Nashashibi, Founding Partner at The Franklin Partnership, NTMA's lobbying firm in Washington, D.C., will present on strategies he and others use to help manufacturers and individuals understand and analyze how an action taken in business or politics may affect your company and industry. Often a lack of accurate information or trusted source can create challenges in decision making that could cost jobs or revenue, and even relationships. Mr. Nashashibi will discuss skills learned over his nearly quarter century in Washington and how using certain effective tools to analyze and communicate can help your business and employees.

**Leadership Workshop: 10:15 AM-12:00 PM**

***Extraordinary Engagement***

Pete Honsberger, Lead Facilitator - CultureShoc

Reach beyond basic engagement levels by learning how to provide your team with Clarity, Autonomy, Mastery, and Purpose. The difference between Intellectual and Emotional Engagement equates to productivity, retention, morale, and your bottom line. Take part in this collaborative presentation and take away solutions to truly engage your people.

**Lunch: 12:00 PM-1:00 PM**

**General Session 3: 1:00 PM-2:00 PM**

***Navigating Sales Relationships***

Darrin Schenck, VP of Sales - DarrinChatter

In his talk entitled: Navigating Sales Relationships, Darrin will cover some of his best tips and tricks for getting the most out of yourself and your relationships in sales. Sales is not an easy profession, but it is vital to the company's success, and Darrin will share his thoughts on how to help ensure longer-lasting sales relationships within your industry.

**Plant Tour: 2:15 PM-5:00 PM**

**A Night Out at "The Duce": 6:30 PM-9:30 PM**

**The Duce** - Where pretty meets gritty and produce meets prohibition. Join us out on the patio at "The Duce" for a fun night of food, music, lawn games and drinks!



**Friday, September 10**

**Breakfast: 8:00 AM-8:30 AM**

**Moderated Roundtable Discussion: 8:30 AM-10:00 AM**

Do you have a hot button issue that you want peer feedback on? Do you ever wonder how others handle a problem you are facing? If so, this is your chance to discuss those items and more with your industry peers.

**Networking Break: 10:00 AM-10:15 AM**

**General Session 4: 9:00 AM-10:00 AM**

***Economics of a Shop - How It All Ties Together***

Dave Capkovitz, Principal - EBITDA Growth Systems  
Mike Watkins, Principal - EBITDA Growth Systems

Learn exactly how a machine shop makes money amid the whirlwind – customers, suppliers, employees and investors.

In this segment, we will define steady and profitable growth as the object of "the game." We will review the various players (functions) that exist within a growing profitable business, and how they interact to consistently run positive plays (e.g., Marketing, Sales, Finance, Operations and Management).

**Conference Closing: 11:15 AM-11:30 AM**



## How to Write Content Engineers Will Read, and Then Take Action

By Rob Felber, Owner & Marketing Executive, Felber PR & Marketing

Whether you are targeting business owners, financial executives, salespeople, or engineers, your writing must always focus on your audience. One particularly difficult audience to target is engineers - be they mechanical, electrical, civil, or chemical, all engineers like facts, not fluff. Engineers, especially those under 40, have taken to the web to research, find partners, and solve problems.

Your task, which is increasingly difficult in a fast-paced, internet-dominant world, is to capture their attention. Engineers can influence the use of technology, position your products ahead of the competition, and often are the main gatekeeper to adopting your products.

### Three key factors to include in your content for manufacturing engineers is:

- Data-focused information that clearly features specifications and facts
- Content that conveys trust and authenticity
- Tools and assessments

**Just the facts:** Whenever possible, use charts, infographics, and video demonstrations. You are appealing to their engineering brain. Analytics, third-party lab results, industry standards are all essential to include when writing for the engineer. If they are putting their name and reputation on the line to recommend your product, they will want to have evidence to back it up. Make the evidence easy to access, download and understand.

**Trust is critical:** Make sure to convey your company history, past success, and standing in the industry. Do you have associates holding positions in key industry trade groups? Has your CEO or lead engineer been featured in a magazine? Are you involved in peer-reviewed research? Use your involvement to portray a company that will not let them down. In all sales, they will not work with you until they trust you.

**Online assessments:** If your product allows, this is a great place to include online calculators, surveys, and quote builders. Provide the information they need quickly and efficiently, and you will be leaps

and bounds ahead of your competition. Use email to send them their results. They will save the email for reference and have your contact information too. You're painting a picture of a company that has been there and is experienced in the problems they face. Demonstrate this whenever possible.

Now, just because your content is filled with facts, figures and charts do not mean the quality of the writing is secondary. We hear it all the time, "I am an engineer, not a writer." No worries. We have a team of technical and journalistic writers that are very skilled in sorting facts from fluff and crafting content engineers will want to read. Have a project or case study you need to be wordsmithed? Give me a call or send me an email. [RobFelber@felberpr.com](mailto:RobFelber@felberpr.com) or (330) 963-3664.

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Matt Wardle, President, JD Machine

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**[survey.mmsonline.com/topshops](https://survey.mmsonline.com/topshops)**

# Cybersecurity & Your 401(k) Plan – New DOL Guidelines

By Ed Hinders, CBIZ Retirement Plan Services

If your company sponsors a qualified retirement plan such as a 401(k) plan... this update is meant for you, your Trustee(s) and your Plan Fiduciaries.

## The Department of Labor (DOL) recently issued three guidelines related to cybersecurity:

1. Tips a plan sponsor should look for in a provider
2. Processes plan providers should have in place
3. Online security tips for participants and beneficiaries

The DOL is essentially indicating that all three parties play a part in keeping plan assets secure. According to the DOL, plan providers should have best practices/processes in place to protect plan assets, including but not limited to the following:

- *Formal, well-documented cybersecurity program*
- *Conduct annual risk assessments*
- *Use third parties to audit the program*
- *Have strong access controls*
- *Conduct periodic cybersecurity training;*
- *Encrypt sensitive data*
- *Have strong technical controls that meet security best practices*
- *Appropriately respond to any cybersecurity breaches*

Plan fiduciaries also have responsibilities in this regard. The DOL requires plan fiduciaries to prudently select and monitor their providers, the intent of which is to safe-guard plan assets. As a cybersecurity breach could affect participant accounts, plan fiduciaries should consider the following:

- *Ask the providers about their cybersecurity practices, procedures, policies and audit results, and compare them what others in the industry are doing;*
- *Ask the providers how they evaluate their procedures and what level of security standards they meet;*
- *Evaluate the providers' cybersecurity track record based on public records;*
- *Ask the providers about any prior breaches,*



*what happened and what was done to resolve the issue*

- *Ask the providers about any insurance coverage they have that would cover any losses due to cybersecurity breaches*
- *Ensure any contract with a provider requires ongoing compliance with security standards*
- *Beware of any language in a service contract that limits the provider's responsibility for any IT security breaches*

The DOL believes plan participants and their beneficiaries also have a responsibility to help keep their accounts secure. The DOL suggests participants/beneficiaries:

- *Register their account and monitor it regularly*
- *Use strong and unique passwords*
- *Use multi-factor authentication*
- *Keep contact information current*
- *Close/delete any unused accounts*
- *Consider not using 'free' Wi-Fi*
- *Don't share passwords, accounts or other*

*sensitive information with an unknown person, even those posing as a known person – it could be a phishing attack trying to obtain this information to gain access to accounts*

- *Use anti-virus software and keep it and all apps current*
- *Know how to report identity theft and cybersecurity attacks*

With all parties playing their part related to cybersecurity the risks of a breach can be minimized.

## Need more help?

Retirement plans are a key benefit to your company, but managing them can be complex and time-consuming. Please contact Ed Hinders, Vice President of Retirement Plan Services at 314-368-7796 or ehinders@cbiz.com for further information on this topic.

## Economic Update: Jobs Report and What Comes Next

- On June 4, the May Jobs report will be released. This report will be reviewed closely considering that the April report came in far below expectations raising concerns about the real strength in the labor market. Growth in April came in at 266k vs. an estimate of over 1.0mm jobs, a big shortfall that surprised investors. Expectations from economists surveyed by The Wall Street Journal suggest non-farm payrolls will have grown by more than 675k jobs in May.
- Signs of increasing inflationary pressures will remain in focus as we continue to see signs of supply shortages across wide swaths of the

economy. Rental cars, computer chips, lumber and even pool chlorine are in short supply. The Fed is holding steady in their view that some inflation should be expected and will be transitory. The release of the May CPI on June 10 will be closely scrutinized by markets for further signs of pressures.

- While the Fed meeting on June 15 and 16 will garner the attention of investors for signs of shifting monetary policy, investors in June will also be watching how Europe is emerging from the pandemic. Recent data suggest that activity is picking up in Germany, the UK will be relaxing



restrictions in June and overall sentiment has greatly improved. Getting Europe back on track will be a big boost to the global recovery.

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# Set Aside the Silos for Reshoring Success

By David Burns, Senior Advisor, AMT – The Association For Manufacturing Technology Principal and Founder, Global Business Advisory Services LLC



David Burns, Senior Advisor, AMT

With more than 40 years of manufacturing technology experience, David Burns believes that dynamic digital manufacturing technologies form a framework for success. Here, he poses some tough questions — and the answers will shape the development of manufacturing technology.

The pandemic provided us with an extended time for self-reflection and time for taking a renewed look at our friends, family, and world around us. Or perhaps the last thing some of us wanted was the luxury of deeply reflecting, scrambling to keep a business afloat, figuring out schooling, or finding toilet paper. I bring up that last item because no matter who you are or what you do, all of us are now acutely aware of supply disruptions of one type or another (e.g., semiconductors).

Because of my four-decade immersion in the world of manufacturing technology, its evolution fascinates me, especially the exposure of our lengthy and fragile global supply chains and subsequent stirring of the reshoring debate.

**“Made-in-America.”** Those words sound compelling, and the forces that drive the decision to reshore are, in fact, compelling. But when we move to a deeper level in that discussion, I would contend that we have some major decisions to make if we wish to accomplish even a modest reshoring goal.

Doing some back-of-the-envelope calculations with an economist friend (AMT Chief Knowledge Officer Pat McGibbon), we realized two critical factors. First, the immensity of the issue. We would need tens of billions in investment to bring back just one-quarter of the manufacturing capacity shipped overseas. (For example, President Biden has proposed a \$50 billion investment for chip manufacturing alone). Second, we can't simply duplicate here what they are doing over there and expect to be competitive. In fact, simple duplication might be a mistake.





## A FRAMEWORK FOR SUCCESS

Based on my time working in the manufacturing technology industry, my sense of a conceptual framework for the future evolution of manufacturing technology is formed by two big groups of ideas.

First, to elevate manufacturing productivity, we need to embrace a comprehensive view of what manufacturing includes. I would propose that view include:

- *Conceptualization, or the period of time from the moment that the idea for a manufactured part is spawned through its design life.*
- *Materialization, which covers the time from material selection to material formation to part completion.*
- *Utilization, including part use, performance, and disposal or recycle.*

Second, the current set of manufacturing tools under development – what I have coined the dynamic digital manufacturing technology tools – are most useful when fully integrated. In fact, I consider a holistic approach a prerequisite for success when implementing digital technologies.

## SILOS VS. CONNECT SYSTEMS

To appreciate what I mean by holistic, I believe that our global manufacturing infrastructure has largely evolved as asynchronous silos. We consciously created separate departments for design, engineering, manufacturing, quality, purchasing, sales, marketing, and management. Because they are asynchronous, a silo can be changed without huge concerns about other silos. Technologies have evolved somewhat independently of each other, and manufacturing management worldwide has done a tremendous job of forcing the pieces to work together.

It is a different story with the emerging dynamic digital technologies. To truly reap the productivity benefits inherent in these digital technologies, we can't implement them in a piecemeal fashion or independently of each other. We need to elevate our game by thinking holistically – that the technologies need to be installed as a comprehensive whole. The good news is that, if we can transform the entire supply chain (separate but connected links) into a digital thread (a continuum), we have the chance to achieve manufacturing productivities beyond what we have ever achieved.

## CHOICES

Now let us return to reshoring and my musings over the last year. Should we manage to gather the financial, political, and corporate mettle essential to create a new manufacturing infrastructure in the U.S. (as I believe we must), then we face a critical fork in the road:

- *Do we invest tens of billions in a siloed manufacturing structure with proven capabilities – even though we know that dynamic digital technologies will replace them in the future?*
- *Or do we make huge investments in emerging digital technologies and re-establish our manufacturing infrastructure using a holistic approach? Are we willing to experience growing pains yet proceed with confidence?*

These are big, tough questions. The answers to them will shape the development of manufacturing technology – if not the course of U.S. history – for many years ahead.

# ENERGY EFFICIENCY



## Holistic Energy Management: What It Means & Why Your Organization Could Benefit

Energy consultants, energy suppliers, energy managers, energy brokers, energy advisors, the utility...if your head is spinning from the options made available to your organization when it comes to taking control of your energy usage, it stands to reason. So where do you turn and what's the best course of action to consider? Let's start by taking a closer look at what holistic energy management means.

### Holistic Energy Management

Energy is without a doubt one of the top expenses for any organization. It's a no-brainer to aim for decreased energy costs, but the question becomes: what the best way is to reduce costs and minimize budgetary risks while concurrently improving the sustainability and efficiency of your organization? Are you under pressure to be "greener" or take greater strides to reduce your carbon footprint? It all comes back to your energy management and energy strategy, which is where a holistic approach enters the scene.

Holistic energy management is as simple as it sounds, aiming to take a full, comprehensive, 360-degree approach to setting, meeting, and exceeding your organization's energy goals, be it reducing costs or meeting the demand for increased renewables. Holistic energy consultants don't look at one aspect of your organization, such as locking you into a new supply contract, but rather they look at your needs fully and holistically, first assessing and then presenting

you with concrete solutions that are varied and also tailored to your borough's individual needs. Simply stated: you'll be provided with a comprehensive way to reduce energy expenses, reduce demand, and improve resiliency and sustainability.

### What Solutions Are Available?

Holistic energy management means taking a full-service approach to what solutions fit your needs to help you reduce and improve. That can vary depending on your current needs and goals, but a few options include:

Negotiating with a wide base of fully vetted, trusted suppliers to provide you with ideal pricing and contract term

Locking into a new (and improved) natural gas or electricity supply contract, but also assisting you well past the point the contract with your new supplier is signed. A holistic, comprehensive approach means your energy consultant is continually monitoring your accounts and keeping an eye out for new opportunities to reduce costs. Moreover, they're on deck to assist you with any supplier issues that may arise, such as a discrepancy on your bill or opening additional service accounts.

Identifying, presenting, and implementing energy efficiency and sustainability solutions that are both product and technology agnostic, ensuring you

are utilizing the most productive energy efficiency measures such as:

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- *Demand Response*
- *Utility Bill Management*
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A great place to start is by contacting the National Tooling and Machining Association's endorsed energy consulting firm, APPI Energy. For more information, contact NTMA's dedicated Energy Consultant, Noel Temple, at 667.330.1159 or ntemple@appienergy.com.



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### How long has UnitedHealthcare collaborated with NAM?

UnitedHealthcare began administering NAM Health Care in October 2019 and is the only health carrier endorsed by NAM nationwide.

### Who is eligible?

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### What plans are offered?

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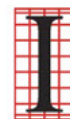
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