

THE RECORD

Published by the National Tooling and Machining Association

Conferences

LISTEN, LEARN, IMPLEMENT



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and so much more ...

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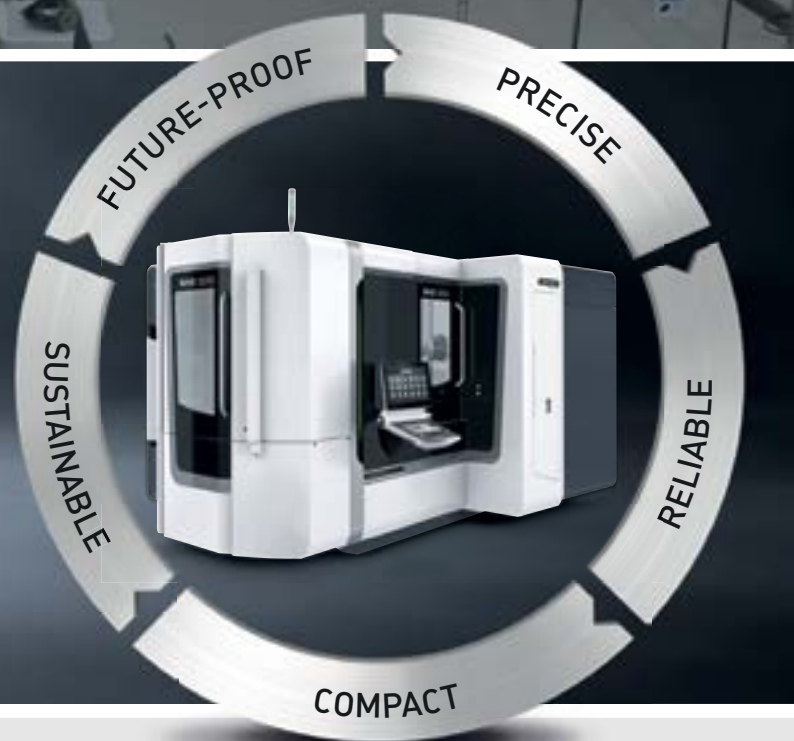
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THE RECORD

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PRESIDENT'S UPDATE

This month's Record focus is **CONFERENCES...LISTEN, LEARN, AND IMPLEMENT**. For many of us who have been members of NTMA for many years, attending conferences was the mainstay of our membership. Back in the day we did not have access to cell phones, or really back in the day...the internet. We were dependent on networking with our fellow members, friendly competitors, and trade publications/personnel to keep up with industry updates and advances. It truly was LISTEN, LEARN, and IMPLEMENT. Even with the massive improvements and speed of communications, personal relationships were and still are richly valued.

While our industry has advanced over the years, communication has advanced at an even higher rate of change, making interaction much more immediate or simultaneous. Being able to send a text, or email in mere seconds to peers and colleagues has left some to believe that conferences are no longer a necessity for progress and information.

I believe the communication breakthrough has benefited greatly the customer/supplier relationship and the communication method thereof, but I'm not sure it has benefited the peer-to-peer communication and relationship that has been responsible for years and years of innovation. Yes, you can Google information, you can listen to podcasts and webinars, you can converse within a closed loop of people within your company or immediate circle, but you miss the broader conversation with peers from different areas, serving different industries, and who have experienced different challenges. That is what I have always valued and experienced in my conference attendance. Thinking we are too busy or cannot benefit from being together with peers is an "industry limiting" lie.

My question is how do you access the unpublished? The conversation driven solutions? The back and forth napkin sketch discussions, opportunities and ideas that are birthed out of face to face discussions with your industry peers? You do it by being together in a like-minded, industry focused conference or event. Yes, for the past two years we were forced to hunker down and stay to ourselves, but that was out of "necessity" not out of a "strategy." In the post pandemic environment, we are acting as if the past two years of staying to ourselves was advantageous and getting back together in conferences and seminars is a waste of our time. We seem to embrace the lifestyle forced by the pandemic, forgetting our successes came from pre-pandemic processes, action, and interaction. I do agree that some semblance of balance is good, but let's not throw the baby out with the wash. Communicating within a closed loop hinders ideas, creativity, and perspective. Most companies in our industry need all the above to continue their success. I am not knocking the availability of knowledge and information, what I'm knocking is the lack of "face to face communication" of the information. That's what we call "hands on experience" in the manufacturing industry. We don't have people

read or research about manufacturing only, we have them take what they learned and implement. Having discussions with those who know, and then applying that combination to hands on experience.

As NTMA enters our **80th year** as an association, one might ask are in-person conferences still relevant? I say **"YES"** if you want to be exposed to other's successes and sometimes failures, which can both teach and protect you. As most of you know I have been a part of shops from 50 to 250 in my career and I cannot tell you the numerous things I implemented in our companies based on discussions and exposure I had from attending conferences where we all came together to share "the good, the bad, and the ugly" about our companies and industry in hopes of helping ourselves and each other. Interacting with others outside my physical area brought a new, different, and valuable perspective.

We live in a time where we have become singularly focused on ourselves and miss the opportunities our industry has to support all US manufacturing. Individual successes alone will only drive additional competition whether domestic or foreign. With the unrest we see globally and the disruption of supply chains, "Reshoring" could, and probably should be the answer for many US supply chain challenges; however, our lack of readiness could be the factor that might keep that from happening. Too much individualism verses a united US Manufacturing front.

These are the challenges that I am committed to fighting on your behalf, but we must unite in membership numbers and conference attendance numbers to make a greater difference together. Any one of us alone cannot do it, it will take all of us. Don't be fooled to go it alone.

As I have shared previously, NTMA had net positive growth in 2022 and has started 2023 with net positive growth. Companies are seeking NTMA out for support, help, and to be a part of a community. Coming together to grow our community will benefit us all, now and for years to come. It is our time to raise up and let our country know we are the manufacturing backbone of America and we are here to lead our country to greatness.

I ask each of you to engage in membership growth and conference participation. These are the places we can make our VOICES heard. Remember, the keys with **"CONFERENCES" are to "LISTEN, LEARN, and IMPLEMENT"**.

Advancing Manufacturing's Future...

Roger Atkins, President – NTMA



NTMA SERVICE AWARDS 2023 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

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

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 Friday, August 11th, 2023.
For a nomination form, contact Linda Warner at lwarn@ntma.org

NEW MEMBER HIGHLIGHTS



TEXAS MACHINED COMPONENTS, INC.

North Texas Chapter

Texas MCI was established in 2021 to serve and support the Aerospace, Defense, Medical and Commercial industries. We are located in Waxahachie, TX, just 25 minutes south of Dallas. We are ITAR registered and our Quality Management System is ISO 9001:2015 and AS9100D certified. We specialize in the manufacture of high precision small to medium sized machined components and assemblies.

Texas MCI isn't just another machine shop; we are a full featured manufacturer of machined components. This means that we are fully capable to manufacture your parts complete per your requirements, including any special processing or finishing to reduce work for our customers purchasing departments. We manufacture components out of most materials, from plastics to Inconel; and nearly everything in between.

Our facility has the capacity to provide a range of services to meet the needs of our customers from reverse engineering to manufacture completed parts per customer prints. We can manufacture product complete, perform individual manufacturing operations on your order or complete partially completed customer furnished blanks or raw materials. Texas MCI's CNC machining capabilities include CNC turning and milling with 2, and 6 axis live tool lathes and/or 3 axis vertical milling centers and are capable of manufacturing parts of a wide variety of geometries. Parts orders requiring special processes such as heat treatment, plating or passivation are outsourced to approved vendors based on customer required certification levels.

1120 Technology Way, Waxahachie, TX 75167
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DIAMOND AMERICA CORPORATION

Akron Chapter

Established in 1999, Diamond America designs and manufactures extruders for "ambient feed" applications (materials processed at 250F and below) including food, rubber, chemicals, and pet food. Area of concentration is for the mixing and conveying of chemical catalysts utilized in the petroleum and pollution control industries. Diamond provides both extruder and die solutions for their customers. Their extruders and dies provide products such as follows:

- Chemical catalysts utilized in petroleum refining, pollution control, and water filtration
- Extruded treats for the dog food market
- Extruded profiles for the rubber and silicone market
- Extruded profiles for Cannabis and other CBD related items.
- Extruded profiles and shapes for the confectionery and baking industry.

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PENSCO TOOL & DIE, INC.

Northwestern Pennsylvania Chapter

Established in 1981, Pennco is known as the cutting edge of precision tooling. We are a third-generation family business that has grown to over 25,000 S/F of machining space. We specialize in close tolerance, challenging spare tooling with on time delivery and competitive pricing. Recently, we have started building complete dies and automation machines which has led us to expand and add a second location. With this expansion, between the two facilities we now have the ability to complete all of our customer needs in house.

At our Tool and Die location we offer many capabilities such as surface grinding, wet grinding, wire EDM, conventional milling, jig grinding, EDM sinker, CNC hole drilling, and laser engraving. We also have expanded our assembly department which gives us the ability to completely assemble and ship dies and automation assembly's that are ready to run when they arrive at our customer!

At our new Mill-Turn-Fab location we specialize in CNC machining. At this facility, we currently offer CNC vertical milling, CNC 5 axis milling, and CNC hard milling. We also plan to add a CNC lathe department and fabrication department in the near future. At the Mill-Turn-Fab location we will be doing small quantities up to low volume production and adding automation to our CNC machines.

99 Mead Ave, Meadville, PA 16335
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PREECE MACHINING AND ASSEMBLY

Rocky Mountain Chapter

Established in 2018, Preece Machining and Assembly (PMA) is a precision CNC machining and milling shop. Our clients create the industries of: aerospace, satellite, defense, optoelectronic, semiconductor, medical science, biomedical research, as well as automotive, food and beverage. Specializing in rapid prototyping and low volume production machining, which features very tight tolerances and exotic materials, we handle projects of any upfront cost or quantity. We command the technical expertise to fabricate very complex, intricate parts. Certified ISO 9001, ITAR and AS9100 (in-process), PMA is winning epic growth in aerospace and health technology.

Nick Preece founded PMA while studying Electrical Engineering at CU Boulder. With the intention of doing R&D, he helped his customers bring their projects to life. Through this journey, Nick discovered a discipline he fell in love with, transforming an R&D journey into an S-Corp machining company almost exclusively doing machining and inspection for the aerospace and defense industries.

Positioned in Boulder, Colorado, (with the highest "high-tech startup density" of any metro area in the US - Inc. magazine) PMA's vision is to strategically scale operations for high production in aerospace, defense, and health technology right here in Colorado.

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Rock River Valley Chapter

All World Machinery Supply is a one-stop-shop for parts, service, and custom machine accessories for manufacturing customers who need aftermarket machine tool support. All World's blend of capabilities combines millions of in-stock products with specialized services such as machine rebuild, chiller repair, spindle repair, field service, machine installation, and machine integration to provide customers with an immediate solution for a down or underperforming machine. Our engineering capabilities include tailored hydraulics, fixtures for workholding applications, and hydraulic power units designed for plastic injection molding processes, all built custom-order for your application.

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NTMA 6S Excellence Award

PURPOSE:

To improve the perception of American manufacturing by promoting and recognizing excellence in member shop organization and efficiency.

HOW IT WORKS:

- NTMA companies apply for the award by submitting a self-assessment based on criteria that demonstrate best-in-class practice in the six S's:
 1. Safety
 2. Sort
 3. Set in Order
 4. Shine
 5. Standardize
 6. Sustain
- Certificates are awarded every year for the first five years based on self-assessments submitted. Once the recipients receive five certificates, they are also presented with a trophy.

SPONSORSHIP OPPORTUNITY:

- Conference exposure via introductions, etc.
- Promotional exposure: web, print, blogs, and emails that promote and support the award.

SUBMISSION DUE DATE:

Please submit your application by September 1, 2023 to be considered.

For more information, please contact
Linda Warner at lwarn@ntma.org or 216-264-2824.

Applications and self-assessment documents can be found here:

<https://ntma.org/resources/ntma-awards>

Applications should be sent to 6Saward@ntma.org

Passing the Torch

As we move forward into the new year, it is with gratitude and appreciation that we recognize and honor the positions of Chairman and Vice Chairperson, both past and present. At the recent CLS event in Albuquerque, NM, the Executive Committee held its first meeting of the year. They took a few moments to thank Alan Ortner for his 2021-2022 service as Chairman of the Board. Following tradition, Alan was given his Chairman's pin ... a longstanding tradition over the years to recognize service to the Board.

We also recognized and welcomed our new 2023 Chairman, Gillen Young, with the presentation of a Chairman's gavel. Gillen received this traditional gift with gratitude and stands true to his commitment to the NTMA and to serve this role with honor.

In addition, we would like to announce that Bonnie Kuhn will serve as our 2023 Vice Chairperson of the Board. Bonnie's commitment to the NTMA and her local chapter, NWPA, is unmeasurable. Bonnie is the first woman to hold the position of Vice Chairperson. NTMA could not be prouder.



Alan Ortner
Past Chairman 2021-22



Gillen Young
Chairman 2023



Bonnie Kuhn,
Vice Chairperson 2023



NTMA Welcomes New External Executive Committee Member – Barry Laughlin

It is with great excitement NTMA introduces Barry Laughlin as the new External Executive Committee Member, replacing Tom Sothard who served two terms on the committee from 2017-2022. We thank Tom for his six years of insight, time, and dedication to the NTMA. It was during our Board of Trustees Meeting at Engage 2022 Barry was approved by the Board of Trustees to serve his first term of three years effective January 1, 2023. The Nominating Team completed the process of identifying Barry as a potential future member of the Executive Committee through the teams vetting process. And as such, they chose him as the most qualified candidate to serve on the Executive Committee.

Born and raised in Springfield, Ohio, Barry attended Ohio University, degreed in Business Management and Pre-Law, and received an MBA in Manufacturing Engineering from GMI University. Barry had various leadership roles in the 27 years at Navistar ending with Director of Global operations. In 2013, he transitioned to Caterpillar in the heavy truck industry. Since 2014, he has worked for Dekko, Inc. and is currently their COO. Barry serves or has served on the local Springfield hospital board, Chamber of Commerce, other 503 boards, Junior Achievement, as well as serving as an advisor for a few small companies.



Tom Sothard



Barry Laughlin

Please join us in welcoming Barry to the Executive Committee. We are excited for him to share his focus and insight with NTMA. Congratulations and best wishes to Barry!

Todd Krell, Apprenticeship School Director for WLENTMA, Celebrates 30 Years of Teaching!



Krell first started teaching in 1993 as a substitute teacher in the subject of Machine Theory. In 1994, he began the journey as a full-time instructor in the subject of Geometry. Krell began teaching as a way to give back to the tooling industry and to contribute to the Western Lake Erie Chapter. For the past 18 years, Krell has been exceeding expectations as the Apprenticeship School Director. He states that the most rewarding aspect as an instructor is when students express that while in his class he was tough and they were not overly fond of him but after they made it through realized how important it was and the better they are for it. Krell has impacted many journeymen and has over 500 graduated students that he educated in the tooling trade. Krell expresses the importance of maintaining the core values of the trade while also understanding the importance of

advancing the curriculum. One of his main goals is to improve the trade by attracting young people into the tooling industry. Krell also stresses the importance of supporting local high schools by educating young people on what types of skills are required for entry-level apprenticeships in the tooling trade. Despite the challenges with the current level of education, Krell is committed to adhering to a high standard of education and believes that the responsibility lies within educators, parents, and the community. The Western Lake Erie National Tooling and Machining Association chapter, the students he has educated, and the community as a whole would like to recognize and honor Krell for the past 30 years of service.

Todd is currently the Chapters Apprenticeship school director. The chapter rents space from Bedford high schools and provides education classes that meet the requirements of our members journeymen programs. The school has been around since the early 1970's and currently has 60 students from 1st to 4th year. More Information can be found on our chapter website at www.WLENTMA.org.

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myFastems services are under continuous development based on customers' feedback and needs. New features will be launched regularly, available to existing customers as soon as they are ready. Fastems will handle the installations automatically, ensuring up-to-date services for its users.

"myFastems is a very important step towards data-based offerings supporting our customers'

The digital service is built as a progressive web application for easy access via web browser on a PC, tablet, or smartphone. It can also be combined with other services such as 8760 support, preventive maintenance, and software maintenance agreements for optimized solutions throughout the entire life cycle. myFastems is available for all current Fastems automation systems from January 2023 and will be pre-installed for new systems in the future.

myFastems brings transparency to any Fastems systems service history and spare parts usage and includes a comprehensive system overview for connected systems, as well as alarm-based recovery instructions and support request tickets. The system overview provides an updated status of all connected Fastems systems, making it easy for users to stay on top of production activities and solve any issues in a timely manner. Support is only one click away. With all necessary system information readily available, Fastems' technical support can understand the situation on site better and faster, reducing critical downtime. Users are ensured their systems will be up and running as soon as possible.

For connected systems, myFastems provides more advanced digital services. These include access to alarm history, key performance indicators such as utilization rate, tools for advanced trouble shooting, and analyses via Incidents view. The Incidents groups system-wide alarms are based on the actual root cause and provide specific recovery instructions. Therefore, users can attempt to solve problems before contacting Fastems support for more flexibility. KPI analytics help monitoring system efficiency, enabling users to identify improvement opportunities based on measured data. myFastems users now have the visibility to both the past and the future of their Fastems systems.

systems availability and, therefore, productivity. It will be relieving for our customers to see systems running well from anywhere and have fast and easy access to technical support when it is needed," said Markku Lindeman, Fastems VP Services. "We will continue to expand myFastems, offering additional content as part of our Digital Services development. New data-driven services will provide features from expanded systems status to early warning and continuous analysis solutions to optimize systems uptime throughout the entire life cycle."

Fastems is hosting virtual webinars to demonstrate myFastems to those who want to learn more about how to manage their Fastems systems more efficiently. The online event takes place from February 21-23, 2023, at three different times. Register here.

For more information, visit www.fastems.com/offering/myfastems/ or contact your Fastems local Sales Managers.

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New Unique, High Productivity "PunchDrill" Offers Significant Time Savings

EMUGE-FRANKEN USA, a leading manufacturer of high-performance taps, thread mills, end mills, drills, and other rotary tools, has announced the introduction of PunchDrill, a totally new drill design offering high feed drilling which doubles the feed rate compared to standard drills without increasing the axial force or spindle speed. PunchDrill reduces machining forces and optimizes chip-breaking, producing cycle time savings of 50% or more when machining cast aluminum alloys with at least 7% Si content and magnesium alloys. EMUGE PunchDrill results in shorter machining times, fewer tool changes, and high metal removal rates, in addition to higher productivity and reduced power consumption.

"At a time when aluminum usage is steadily growing, we are pleased to offer our customers the fastest drill available on the market -- another innovative EMUGE cutting tool solution that significantly saves time and enhances productivity," said Bob Hellinger, President of EMUGE-FRANKEN USA.

PunchDrill features patent-pending geometry with an innovative chip breaker which produces short chips to control machining forces. The new drill also has newly developed surface treatments and a hard diamond-like coating specially designed for this application to provide reliable chip removal and increased process reliability. When high-speed PunchDrill is used at the recommended feed and speed, axial force is reduced by half. The increase of the feed at the same rotational speed results in a significant decrease of machining time with less machine wear, while retaining tool life. This in turn reduces machine power consumption, saving costs and supporting sustainability.

The exceptional self-centering capability of the drill tip on PunchDrill enables the best possible positioning accuracy on holes. EMUGE PunchDrill is available in drilling depth ranges up to approximately 8 x D, the nominal diameter range from 0.129" to 0.472" (3.3 mm to 12 mm). Machining is done with a normal



drilling cycle on CNC machines with cutting speeds and coolant pressures similar to conventional drilling. Even on unstable parts and clamping, PunchDrill can perform with greater process reliability. PunchDrill can also perform as a step tool.

For more information about EMUGE PunchDrill including a video, visit [PunchDrill | Emuge Corporation](#).



For over 100 years, the German company group **EMUGE-FRANKEN** has been one of the world's leading manufacturers of precision tools for thread cutting, gaging, clamping, and milling. With 1,950 employees, EMUGE-FRANKEN offers an innovative product program with 40,000 in-stock items and a multiple of that with customer-specific tools. The product range focuses on applications in the automotive industry, power plants, aerospace industry and medical technology as well as general manufacturing. As a complete system supplier for the machining industry, EMUGE-FRANKEN has branch offices or sales partners in 52 countries.

EMUGE-FRANKEN USA is a wholly-owned subsidiary of the 1,950 employee German company EMUGE-Werk Richard Glimpel GmbH & Co. KG (Lauf, Germany). EMUGE-FRANKEN USA offers end-user technical support through a network of in-the-field engineers and in-house product specialists, all with extensive tooling and application experience. Over 10,000 types of cutting tools and accessories are stocked in the company's U.S. and Canadian Headquarters located in West Boylston, MA, U.S.A. The recently expanded 50,000+ sq. ft. facility includes a technology center with a machining and tooling demonstration showroom and classroom, tool manufacturing and coating, reconditioning, warehouse, sales, support, and administrative offices.

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“

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The PGH NTMA/MSC Apprenticeship Competition – A Test of Skill, A Testament to the Future

By Molly West,
Pittsburgh Chapter NTMA

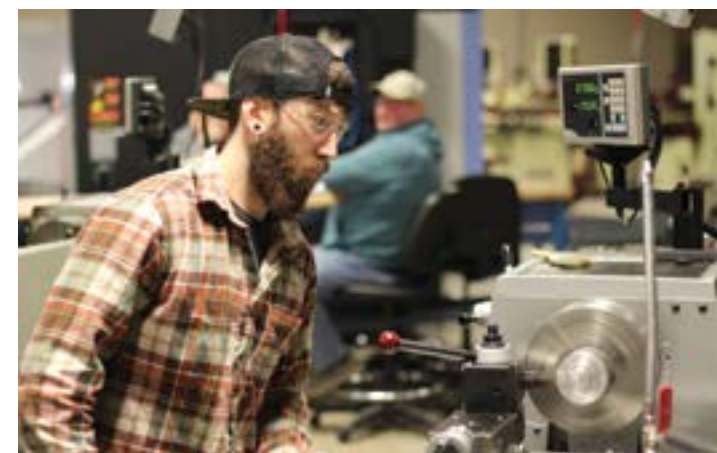
Sure, the Pittsburgh Chapter NTMA/MSC Apprenticeship Competition is about being the best apprentice—but it's also about being the best version of yourself.

The annual competition, which has been a tradition for more than 30 years, tests hands-on performance in setting up and operating machine tools, including a manual milled part and a manual turned part produced to specifications. Additionally, competitors take a written examination to assess knowledge. A point system based on understanding, skill and efficiency determine the winner.

In 2021, Michael Lenhart of Penn State Tool and Die Corporation in Mount Pleasant, PA, won the competition. “It definitely showed me my strengths and weaknesses, especially under stress. With a time limit and during a competition you really have to think about every single process that you are doing and the most efficient way to work on the part.”

And truly, that's what the long-running competition is all about. Yes, the winner has bragging rights and is named “Best Metal Working Apprentice in Southwestern Pennsylvania” but at the end of the day, it's an opportunity for each apprentice to expand individual knowledge and skill in his or her chosen field.

“It helps the apprentices by reinforcing the need to hone their craft and by showing them what they need to work on,” Lenhart said. “Also, giving them the opportunity to work on manual machines and understand how to machine something efficiently on



their own. Too many people are given a part and told exactly how to work on it either by a CNC programmer or others and this really gives them an opportunity to think for themselves.”

James McDowell is the manufacturing manager and Lenhart's supervisor at Penn State Tool and Die Corporation. He's also a member of the Pittsburgh Chapter's Apprenticeship Steering Committee, a competition volunteer and a past participant himself. “It's a great feeling seeing the pride and hard work of the contestants and having the opportunity to share my knowledge and experience.” He's involved with the PGH NTMA/MSC Apprenticeship Competition because Penn State Tool is committed to providing the best training possible for their apprentices. According to McDowell, “The better the training, the better the machinists we produce.”

The contest is open to all apprentices of the Pittsburgh Chapter NTMA Apprenticeship Program and any apprentice employed at an NTMA member company. Year 1 & Year 2 apprentices must have earned at least 5 NIMS credentials to qualify. No more than two apprentices per company may compete. The contest draws between five and ten contestants annually.

Liz Blashock, Pittsburgh Chapter NTMA program coordinator organizes the event. “We get the best of the best,” said Blashock. “The apprentices who compete are skilled and knowledgeable—and make no doubt about it, they are there to challenge the competition, and push themselves.”

Apprentices are given never-before-seen blueprints with a complete toolbox and material ready to create these machined parts. Competitors are allotted four hours for each part. All final products are then sent to two National Tooling and Machining Association (NTMA) member companies for inspection and scoring by a quality control inspector. The results are announced at the Pittsburgh Chapter NTMA Apprenticeship Graduation Banquet each year in June.



“The night of the banquet, you can feel the energy,” said Ed Sikora, Pittsburgh Chapter executive director. “Most of our competitors attend the banquet with company representatives. There's a collective sense of anticipation. When we announce the winner, you can really see the pride in the apprentice and their employer.” In addition to the title, the winning apprentice wins a Gerstner toolbox.

This event is made possible because of a dedicated group of staff and Steering Committee volunteers, and a committed group of sponsors including: MSC Industrial Supply, Westmoreland County Community College, Alro Steel Company, Penn State Tool & Die Corporation, Hamill Manufacturing Company, IMI PBM and Kurt J. Lesker Company.

“The longevity of the competition is really a testament to our member companies and their commitment to southwestern Pennsylvania metalworking. It's their dedication to the future that continues to produce top-notch machinists,” said Sikora.



McDowell may be the perfect example of that. Nineteen years after HE competed in the competition, he'll be at this year's event volunteering and supporting the next generation. He says events like this one, “create better journeymen for the industry.” And that, is a win for everyone.

pghntma.org

Northern Utah Chapter of NTMA hosts 4th Emerging Leaders Conference

The NUNNTMA Chapter maxed out attendance at their 4th Emerging Leaders Conference. The mini-conference featured sessions from US Synthetic, JD Machine and WeighSafe. In addition, Hoyt Archery opened their plant for a tour. The half-day conference was the first in person since 2020.



And meanwhile over on the West Coast... The LANTMA Chapter tours the Long Beach Port



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Sam is an American entrepreneur and featured keynote speaker. He played Division I college ice hockey, co-founded an online tech company and NGO in Singapore and has traveled to every country in the world. Sam was wrongfully imprisoned on false charges of espionage in Syria in 2019. Today, Goodwin shares his experiences through speaking engagements worldwide, including to audiences of elite athletes, faith groups, corporate conventions, the US Military and others.

LOCATION

October 18-21
Indianapolis, IN



Indianapolis Marriott Downtown
Room Rate: \$209 per night

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Hear what attendees are saying about our events:

“The networking opportunities are great, at each Fall Conference I’ve given my business card to at least one person that reaches out in the weeks following for an RFQ.”

– *NJ Goulet, United Centerless Grinding*



“I thought this was the best event yet, really appreciate you and the opportunity to be a part of such a welcoming organization. We have found that there is an opportunity for us to help a lot of members, and plan to engage further. This conference is great to learn more about the existing struggles, the economy, and industry as a whole.”

– *Bobby Mercurio, Global Shop Solutions*

“I felt this conference had a very welcoming and warm feeling. It was enjoyable to visit with the members and this points out why our association is one of the best. Encouraging to see new faces and a younger crowd.”

– *Sam Griffith, National Jet Company*

“First time attendee - Learned a lot through informative topics, breakouts, and networking breaks. WWI memorial tour, Basketball HoF event, and Plant teams were well organized and engaging. Economic/Political updates and breakout sessions were very helpful.”

– *UJ Baid, Kennametal*



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, JD Machine

“It was a good event. Appreciate the support the associates provided with their tables. The most valuable aspect to me was getting the perspectives from those outside our trade on the market and manufacturing trends.”

– *Bob Young, Custom Tool Inc*

“The speakers and the breakout sessions were the most valuable to me. I rarely get to make time to listen to speakers on topics like these, and the breakout sessions had really good conversation.”

– *Frank Seger, Tru-Edge Grinding Inc*

“I love the group outings that you guys have been picking. The basketball thing was amazing and great time for socializing.”

– *Christina Collette, Reata Engineering & Machine Works, Inc*

“As always, there is a good information that I come away with from this conference. Nice to talk with people as well as the community help of building the wagons.”

– *David Boyer, Boyer Machine*

“It is really the best time for networking and are an important piece of the conference for me. Kansas City was also a real surprise and I was very impressed with the city.”

– *Drew Borders, Blaser*



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Optimizing for Conferences and Shows

PEOPLE, PROCESS, POWERFUL TOOLS

By Ed Marsh, Consilium Global Business Advisors, LLC

I remember my incomprehension in 2013 when I first encountered a company selling complex, high ticket products exclusively with an inside sales team.

It couldn't be, I thought. If you want to sell something to the C-Suite that costs >\$100K and will disrupt current operations, it had to be sold in person. I was wrong. The market knew better.

Nearly a decade later, three things are clear.

- First, remote transactions are not just comfortable, but often preferred by buyers. McKinsey research shows that “71% percent of buyers are willing to spend more than \$50,000 in a single transaction, and 27 percent would spend \$500,000 or more” in a fully remote transaction.
- Second, tactics and tools have evolved enormously to support remote sales models although industrial sales teams haven't necessarily evolved in parallel.
- Third, despite these changes, in person events remain appealing, valuable, and important for marketing, sales and professional development.

So, attitudes are changing, yet events remain important. Capturing opportunities at the intersection of popular in person events and changing buyer preferences for remote engagement requires creativity and planning.

Seven Suggestions To Maximize Conference & Event Impact

Conferences and events are expensive. They involve direct costs for travel and entertainment and exhibition related costs. Time out of the office, and interruption of other activities carry heavy indirect costs. Too often busy folks juggle competing priorities right up until the event, dashing off to the airport and hoping to prepare during fleeting moments in a ride share.

They probably extract some value from the event, but less than if they really prepared. After all, organizers put enormous effort into planning and creating a flow for the event and sessions.

As long as you're making the investment, let's maximize the impact. You'll need to start well in advance (>60 days) and consider these seven guidelines.

1. **Extend your reach** – Many companies focus on the events in their niche. Those can be great opportunities for continuing education and connecting with long-time friends. They also get stale. Finding new ideas at the intersections of different disciplines and making new connections often requires participating in events tangential to your core focus.

2. **Incorporate digital tools** – There are numerous ways to build digital power into your event participation. Examples include:
 - 2D bar codes on your business cards (could link to your website, an offer, LinkedIn profile, blog subscription page, a video you made before the event, etc.)
 - Make LinkedIn connections before and after, and practice using the handy profile scan feature to connect when you're chatting in person
 - Share your event participation and takeaways on social media before, during and after the event. Use hashtags and handles to broaden your reach and encourage sharing.
 - Create event landing pages or a microsite to share resources (and set a tracking cookie)
 - Add contacts to your email list and send a tracked email after the event
 - Track event contacts with a unique event lead source to measure ROI
 - Create a Twitter event list (notable speakers, attendees, hashtags)
 - Print a small run of event specific business cards with a link to specific resources
3. **Provide value in advance** – Don't just show up and expect participation to drive success. Start in advance by identifying 3-5 important themes around which you'll create social posts and insightful articles. You might even create an appropriate downloadable resource that you know will be of interest to event attendees. Provocative is better!
4. **Set advance meetings with specific agendas** – Identify key attendees with whom you'd like to meet, reach out to introduce yourself, and schedule brief meetings with specific agendas in advance. Create a calendar share link with event specific parameters to simplify the process.
5. **Connect with potential partners** – Think beyond prospects, customers, and vendors. Consider influencers and even partners for collaborative efforts. People at events are often more receptive to creative discussions than when they're back at their desk and resist interruption.
6. **Set KPIs for your team** – Have goals for every conference, show and event that include high level (e.g. strategic initiative) and tactical (meetings, contacts, new ideas) goals for each attendee.



Share your event participation and takeaways on social media before, during and after the event.

Coordinate before the event to clarify responsibilities for research and mutual expectations, and connect immediately afterwards to debrief while the event is still fresh in people's minds.

7. **Seek and promote speaking opportunities** – A broader range of events will provide access to new audiences who will value your company's expertise. Research speaking opportunities for you and your team. Once secured, promote them to support the organizer and grow your market reputation and authority.

Events Remain Important – Treat Them Accordingly!

Conferences and shows continue to attract attendees even as costs increase, and many business behaviors move online. That makes them special opportunities in a world where personal contact is less common. It also ratchets up the importance of advanced planning and preparation to unlock the full value.

Ed Marsh is a United States Veteran, Keynote Speaker, Consultant and Independent Director for Consilium Global Business Advisors, LLC

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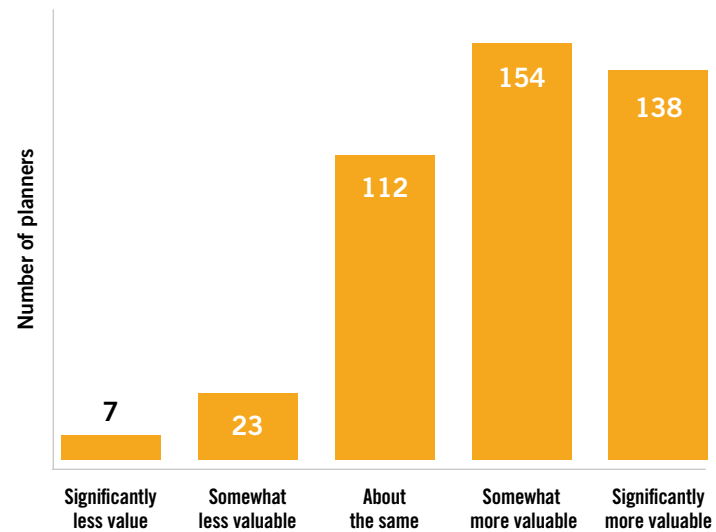
What are the experts saying about the future of events?

1 THE PERCEIVED VALUE OF FACE-TO-FACE EVENTS HAS INCREASED.

Event planners were asked:

“Generally, how does your organization, or your clients’ organizations, perceive the value of face-to-face meetings now versus prior to the pandemic?”

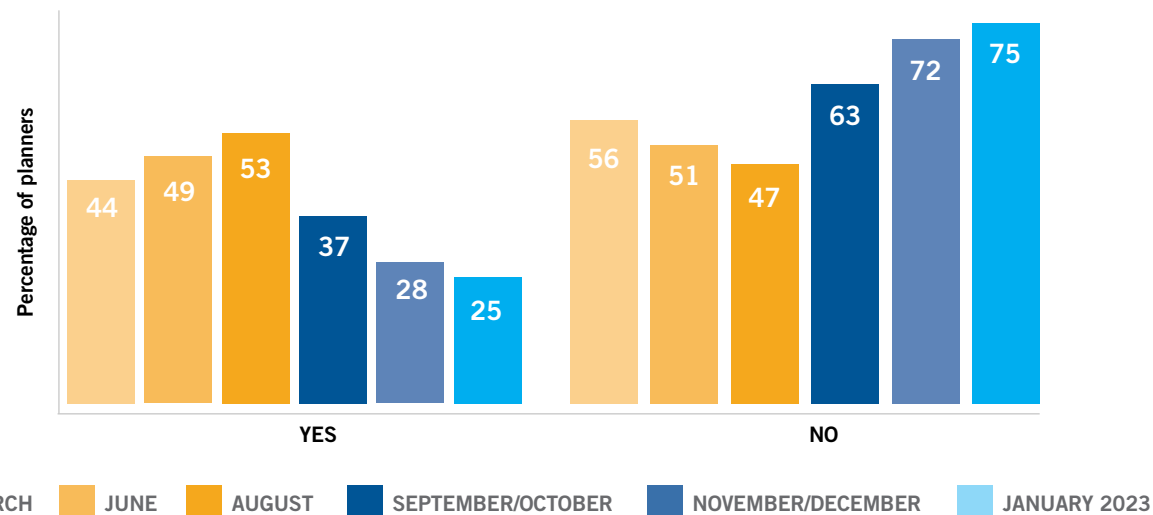
With 1 being significantly less valuable and 5 being significantly more valuable, face-to-face events score 3.91.



2 COVID'S IMPACT ON EVENT PLANNING CONTINUES TO WANE.

Event planners were asked: “Is concern for Covid-19 impacting your current planning in any way?”

Covid hasn't gone away, but its impact on planners continues to diminish.



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Foundations of Leadership

By David Capkovitz, EBITDA Growth Systems



Good leadership is something that we all appreciate and lean into when we need strong guidance. As we progress in our careers as well as our personal lives, we see strong growth when we have a leader that is beside us when we need them. These people in my life have helped me create transformational growth both personally and professionally.

The flip side of this is the fact that I have not always been a good leader. I started my first company very young and without a significant amount of formal education. The blessing is that I had leaders in my life grab me by the shoulder and help guide me into being a much better leader than when I started. Whether you are a new leader and have little experience leading; you have been leading a team for quite some time; or a well-seasoned leader that oversees many souls, we all need to stop and look in the mirror to make sure we are leading others well.

First time managers can be miserable, and make others miserable if they aren't trained well. This is significant because in most machine shops in prior years, the most skilled person found themselves operating as a manager without any training. This statistic, and the fact that only 14% of people come to manage well naturally (Gallup), can cause quite a bit of disruption and profit loss to an organization. First off, you could possibly lose your highest skilled person from the floor because they cannot do both well at the same time, and secondly, you could have an individual that is operating like a fish out of water. This causes people to

“just do it themselves”, talk to people like they are “stupid”, or “less than”, or to act harsh like “everything is a nail when all you are is a hammer” due to being run down. These typical personas that we see with untrained managers run-off dedicated employees with talent that we can't afford losing in today's market.

In this article I will go into the 4 passages of leadership.

Passage #1 – Managing self to managing others.

This position could be a department Lead. When you enter into a management role for the first time, you are not just responsible for your own actions, you are responsible for others as well. A good manager needs to not rely totally on their own hands, but on all the hands that work for them as well. Managers in this phase need to learn to value managerial work, not just tolerate it. This includes the caring and feeding of their team, and a personal commitment to interacting with their team daily, even if only for a minute. This also involves having a good response time to issues that the team needs the manager to address in order to do their job to the best of their ability. A manager has to have a strong understanding of all their roles and responsibilities like scheduling, planning, and coaching to perform well. This front-line manager is critical to overall success, and we need to invest time and effort into them to expect a good outcome.

Passage #2 – Managing others to managing managers.

This could be a department manager over many leads. This level of manager is selecting the future leaders of your company. This level is also at a point that they must only manage, divesting themselves of individual tasks. In this position it is critical that the manager understand the broad strategic issues that affect the business. Having a normal cadence of 1:1's that they do not miss or put off is a critical portion of the manager investing in their team regularly. Setting clear and unambiguous goals that are followed-up on regularly to meet expectations is a large part of successfully managing others. This along with the skill of proper coaching are critical building blocks for this passage.

Passage #3 – Managing managers to managing functions.

This level is typically a director. It is also when a manager could be managing areas unfamiliar to them, so they must have a strong managerial foundation. It is also important to have understanding and value for work that is foreign to them. Team play with other functional managers and competition for resources must be learned. Many of us have seen a good manager get sideways with another manager at the same level, and this never ends well. It is critical that this manager blends the strategy of their own with the business's overall strategy. If

not, this manager can quickly find themselves not performing well and on an island. At this level, effective leadership entails creating a functional strategy that enables them to do something better than their competitors.

Passage #4 – Managing a function to managing a business unit.

This could be a General Manager, COO, or President. This Manager will be responsible for the bottom line of the business. Managers at this level are normally responsible for many unfamiliar functions and outcomes. They also need to be able to balance future goals and present needs while making trade-offs between the two. This Manager sets or helps set the strategy of the business while

always keeping their eye laser focused on achieving the business strategy. Managers at this level are experts in analysis and have a keen ability to reflect on the current position of the business while charting a course for accomplishing the strategy.

An advanced manager must possess strengths around planning, organizing, staffing, and controlling, as well as leading. These traits exercised properly will drive a business north and accomplish the strategy set before them.

Many of us have worked for managers that did not have these skills or traits. Our hope is that you have learned what not to do from these types of managers. Keep it

simple for you and your team. Have clear and unambiguous roles and responsibilities for your team. Hold the team accountable to these responsibilities. Spend time and money on employee engagement. Don't take your eye off of your “North Star” (strategy) while performing your duties. Finally, treat your team well, care for them, and empower them to be their best selves. Follow these simple rules in your Manager position and you will find success.



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Empowering the NTMA Chapters – Recapping Chapter Leadership Summit 2023

The NTMA Chapter Leadership Conference is an annual gathering of chapter leaders from across the country. This year, the conference took place in Albuquerque, New Mexico from January 25 - 27 and was attended by representatives from 18 chapters.

The conference was opened by NTMA's President, Roger Atkins who discussed the current, positive state of the association and its chapters. He emphasized the association's mission to help member businesses thrive and highlighted the importance of chapter leadership in achieving this goal and in promoting the precision manufacturing industry as a whole. There was excitement in the room as Carrie Marsico demonstrated NTMA Connect - the new online community that was just launched!

Throughout the conference, chapter leaders attended a series of workshops and presentations. Special mention must be made of Dale Davis (Western Lake Erie) and Sally Safranski (St. Louis) who shared their practical and actionable strategies for recruiting and retaining members in their chapters. Other high points included the Table Talks sessions, where attendees had the opportunity to learn about some of NTMA's key affinity partners and programs, and a session on “Powerful Networking” by the profitability expert team from EBITA Growth Systems. These discussions allowed attendees to deepen their understanding of the various services available to them and find new ways to support their chapters and member companies.

The 2023 NTMA CLS was a big success and provided a platform for growth of chapter leaders. We are already looking forward to gathering again next year!



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A One-of-a-kind Perspective On How To Get Started With Automation

At **HEIDENHAIN**, we occupy an interesting place in the automation value and supply chains. Not only do we often get to work with end users on the processes they're trying to automate, but we also supply subcomponents to the automation OEMs from whom end users buy.

In other words, we have a hands-on understanding of how important cost-of-ownership is for OEMs and return on investment is for end users. Plus, our reach extends beyond North America, giving us exposure to automation problems and solutions of almost every type.

While adoption is accelerating, and will only continue to, one of the understandable hang-ups is that large-scale automation basically requires a top-to-bottom structure, where all that automation plays into larger management systems. It's not just a robot doing a task, it's a robot doing a task with human collaboration, to either work with a product over or move it to the next step of the process together. This also speaks to the difficulty of retrofitting tools or processes that were originally designed to be done manually, or that are part of a larger manual operation. And that's just on the floor level. Then, you have management services that you have to consider.

So, how can manufacturers think about introducing automation and how can robotics suppliers help in the transition? Let's walk through a few of the considerations in play during the early stages of industrial automation.

1. The user's mindset

There are two major factors driving adoption of industrial automation. On the front end, there's a new generation of operators that are used to working in the digital world with all



“There's a new generation of operators that are used to working in the digital world with all the information about anything they've ever wanted at their fingertips.”

the information about anything they've ever wanted at their fingertips.

They think: If we can do that in our day to day life, why not in our factory? Why not in our machines? There's nothing stopping us from having all the information we want in a digital format. This is forcing the industry forward on a variety of levels.

Meanwhile, the structure around automation has improved to the point where it's priming the movement. There are more companies and systems doing big data analysis and cloud computing. It's the infrastructure that can provide good, usable information based on all the data being collected.

Users know automation is available and needs to be taken advantage of, but they may not understand the subcomponents that can help them activate it. That's where we can help users and automation OEMs figure out how to collect the information they want and make it actionable.

2. Starting small

End users should start simple by identifying what they want to accomplish. They should find where it makes the most sense, somewhere that will have the most effective impact. Buy-in and clear answers to some simple questions can jump start the process:

- What do you want to automate?
- What do you want to improve and how do you want it to fit in?
- Do you want people involved in the area?

With a basic framework in place, it's easier to dive another layer deeper, narrowing down the fundamental characteristics of the automation:

- How fast do you want it to move?
- How accurately do you want it to move?
- Is a certain level of functional safety required?

That's where the feedback systems, motors and controls we make come in. These components play a huge role in determining the performance and reliability of these fundamental functions.

Automating can be that big, grand idea, but it doesn't have to be. Make incremental improvements, get a taste for it, then start thinking bigger.

3. Active monitoring

Automation can be a pick-and-place robot or AGV, but it can also take the form of data collection, and the rolling up of that data into something actionable. For example, implementing temperature control for sensitive quality areas in the plant is something everyone should be doing, but it can be automated—leading to lesser room for error and one less thing to worry about.

Actionable monitoring comes down to where sensors are deployed and how they communicate out. Temperature, vibration, magnetic flux, etc., the proximity of feedback devices to core motion elements makes them the ideal vessel for these other sensors; the

closer to the core, the more revealing and accurate the information. Today, our encoders can do more than ever and are in a constant state of redevelopment to achieve a smaller footprint and transfer more information without sacrificing our legendary accuracy. Bus operation is even an option, where multiple linked encoders and sensors send one communication stream back to the controller.

Moving beyond speed and throughput, we're thinking about environmental conditions, making it easier to recognize when things are operating at the best, conditionally, and what situations can lead to that. Users are starting to understand what the capabilities are—beyond just predictive, to proactive maintenance schedules—and the potential return on their investment when alerts or actions are triggered automatically.

4. Getting machines to talk to each other

While active monitoring is a nice way in the automation door, the other big question

users have is how data gets sent around. It's one thing to have information a machine can use independently, but in complex workflows, machines need to communicate clearly with each other. This is where the right interfaces come in.

This means of transmission acts as the language that devices use to communicate. Our interface technology is purely serial and bidirectional. The latest version, EnDat 3 has graduated from fundamental reading and writing classes to college-level language courses. Instead of just talking about motion, it's talking about temperature, motor coils, etc., and in a common language most controllers and other devices will recognize.

The interface once had two additional information slots. Now it can handle up to 16 and it's able to do more things at once. It's opening the possibilities of what sort of component-level information the end user can activate. It can essentially function as a component network.

This kind of technology can quickly move robotics and workflows towards seamless integration, where you're able to just plug a robot or device in and it already understands what it is talking to and how.

If you're looking to gain an autonomous edge, we can help. Find out more about the component-level solutions we provide.

HEIDENHAIN *From CNC controls to individual motion control components, HEIDENHAIN has the know-how, hardware and software to make machine tools more precise, powerful and reliable. Whether you're a machine tool builder or end user, we can help make your machines more efficient. Learn more at [HEIDENHAIN.us/industries/machine-tool/](https://www.heidenhain.us/industries/machine-tool/).*



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What is Additive Manufacturing?

The industrial origins of additive manufacturing date back to the mid-1980s. In 1984, the U.S. physicist Chuck Hull patented the process of stereolithography, in which liquid plastic could be selectively cured layer by layer in a tank via a laser beam. This mechanical build-up of material made it possible to create any desired components with complex shapes and even filigree internal structures directly from a three-dimensional CAD model.

Since then, this almost limitless freedom of design has excited researchers all over the world and inspired the development of ever new processes and applications with new materials. The spectrum of materials now ranges from plastics to ceramics and organic fabrics to a wide variety of metals. Overall, however, experts still see additive manufacturing at the beginning of its possibilities.

So the question of what additive manufacturing is can neither be answered in all its diversity nor conclusively. But at least there is a common denominator from which internal standardization has derived a terminology standard. Accordingly, additive manufacturing refers to processes for joining materials to produce parts from 3D model data, usually layer by layer. Moreover, ISO/ASTM 52900 categorizes commercially available AM systems into seven different processes, which differ in the way the material layers are created.

THE GLORIOUS SEVEN OF THE ADDITIVE WORLD

Since some of the additive process sequences are similar to the processes in an inkjet printer, the term 3D printing has also become established for additive manufacturing in common usage. However, the basic principles of the processes differ, sometimes extremely, according to the starting materials and the way in which



Directed Energy Deposition (DED)

the material is joined to form a solid body. Thus, the base of a 3D print can be liquid, powdered, viscous or solid, which is solidified and built up by melting together, sintering, laminating, bonding or polymerization, depending on the technology.

1 | Powderbed Fusion (PBF)

Powderbed fusion (DIN: powder bed-based fusion) is the dominant method in the metal sector. Here, components are manufactured by building up material layer by layer, as in the primeval days of stereolithography. The individual layers correspond to the horizontal “sections” of a three-dimensional CAD image of the body to be produced. These layers are then used to calculate a control program that directs a laser or electron beam with high precision over these cuts to fuse the material over their entire area. The area adheres to the previous layer and becomes solid as the material cools. Once the layer is melted, a new layer of powder is applied. DMG MORI has a successful presence in this area with the LASERTEC SLM series.

2 | Material Extrusion (MEX)

In material extrusion (DIN: material extrusion), the material is selectively dispensed through a nozzle or orifice. The moving nozzle, also called an extruder, applies a layer of material, whereupon either the extruder or the build platform raises or lowers and the process is repeated. MEX can be used to print a variety of materials. Mostly, these are thermoplastics in the form of so-called filaments (e.g. ABS, nylon, PEEK, PLA, etc.). In general, material extrusion can process paste-like materials. These include

concrete or ceramics, but also foodstuffs such as chocolate or dough.

3 | Vat-Photopolymerisation (VPP)

In the VPP process (DIN: bath-based photopolymerization), liquid polymer resin material is selectively cured in a tank by light-activated polymerization. The two common VPP variants use either a laser or light-emitting diodes (LEDs) in conjunction with digital light processing (DLP) as the energy source for curing the resin. Laser-based VPP systems typically cure one layer before lowering the build volume and spreading a new layer of liquid photopolymer over the build area.

4 | Binder-Jetting (BJT)

In binder jetting (DIN: free-jet binder application), a print head applies droplets of a binder to the material and fuses the particles together in a predetermined pattern. Polymer, metal, ceramic or sand are processed. Once a layer is completed, the print platform moves down and a new layer of powder is applied to the build platform. Parts produced with binder jetting usually require post-processing to improve their mechanical properties. This may include adding an additional adhesive substance or placing the part in an oven to sinter the particles.

5 | Material Jetting (MJT)

In the MJT process (DIN: free jet material application), droplets of a photopolymer or other wax-like substances are selectively applied via nozzle heads. The material is then cured and solidified with UV light. Once a layer is cured, the print head nozzles apply

new material to it layer by layer. This process can print different combinations of materials, creating different material properties or colors throughout the 3D printed part.

6 | Directed Energy Deposition (DED)

In the Directed Energy Deposition process (DIN: material application with directed energy input), a material is fused by targeted thermal energy by melting during application. The starting material is either a metal powder or a wire. The process produces near-net-shape parts and usually requires machining to achieve the required tolerances. For this reason, the DED process is often combined with a milling machine (at DMG MORI, exemplified by the LASERTEC DED hybrid series). More than one material can also be processed with DED. A special feature is that the process can also be used to repair damaged parts by applying the material directly to the damaged areas, for example a forming tool.

7 | Sheet Lamination (SHL)

Sheet lamination (DIN: layer lamination) also involves joining components by stacking and laminating thin layers of material – in this case using an adhesive or welding process. The materials that can be processed include metal, paper, polymers or composites. The layer contours are usually created by a machining process before or after the application of a layer or material. Possible process variants include Ultrasonic Additive Manufacturing (UAM), Selective Deposition Lamination (SDL) or Laminated Object Manufacturing (LOM). These processes are quite inexpensive

and fast compared to other additive techniques, but also offer a less precise design.

AT THE BEGINNING OF POSSIBILITIES


This overview of additive manufacturing processes makes the geometric diversity and versatile material selection obvious. Due to such advantages, additive manufacturing has already been able to firmly establish itself in many fields of application such as mechanical engineering, die & mold, medical technology or aerospace. Measured in terms of potential, however, the technology as a whole is still at the beginning of its possibilities. Overall, it is said to have the power to change industrial production profoundly and sustainably – always driven by the vision of being able to manufacture individualized, customer-specific products quickly and cost-effectively. Directly at the heart of the maturation process are materials, component size, accuracy, reliability and reproducibility. Indirect challenges also exist in automated post-processing, standardization of additive manufacturing and testing processes, and in terms of training both operators and engineers.

Meanwhile, the story of additive manufacturing is continuing not only in industry. In addition to the production of individual implants and prostheses, the potential applications in medicine, for example, range from training and diagnostics to the preparation of surgical procedures. High hopes are also pinned on the vision of “bioprinting”. However, the “printing” of the body’s own cells is still in the status of basic research.

Additive manufacturing in architecture and construction is much closer to practice (and easier to imagine). The production of design models for construction planning is already commonplace. Even printing the shells of houses is no longer a utopia. The general motivation is growing, especially in these fields of application, from the productivity, automatability and environmental compatibility of additive processes.

And the private sector has already discovered the benefits of additive manufacturing for itself. The multitude of materialized self-images are just as much evidence of this as the printer offers at discount stores or the numerous 3D communities for the exchange of tricks and data among tinkerers. One of the important side effects of the positive basic mood toward additive manufacturing processes is that it promotes interest in technology and innovation in society. On the other hand, 3D printing shows in countless small examples in the private sphere how, on the whole, the environment can be enormously relieved with low energy and material consumption and less waste in individualized production.

DMG MORI *Would you like to learn more about exceptional additive manufacturing offerings at DMG MORI? For this, our blog post “The future of additive manufacturing processes” offers you special insights into the powder bed machines of the LASERTEC SLM series and the unique advantages of the LASERTEC DED and LASERTEC DED hybrid machines.*
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30 Minutes for Machine Monitoring

By Stephen LaMarca, AMT Technology Analyst

You've heard the claims. Thirty minutes for toned abs. Thirty minutes to make a gourmet dinner. Yeah right, you say. That workout must be done every day (bummer). That dinner takes 30 minutes to prep AFTER you chop, slice, and measure all the spices.

It might not be as glamorous as six-pack abs or a bougie banquet, but this time, there's no catch. You can actually set up free machine monitoring in as little as 30 minutes using a tool created by the great folks at Oak Ridge National Laboratory (ORNL).

In a recent episode of the Tom and Lonnie Chat (TLC) podcast, Dr. Tom Kurfess from Georgia Tech and Dr. Lonnie Love from ORNL were joined by Dr. "Cyber" Kyle Saleeby from ORNL and his intern Matt Kosmala, a junior computer science major at North Carolina State University.

Matt detailed his project to utilize Google Sheets to develop a no-cost machine monitoring solution. The project also used the MTConnect standard (MTConnect.org), a vocabulary for manufacturing equipment that provides structured, contextualized data and helps machine tools communicate more effectively.

Free and first-rate

Everybody likes free. But what about the quality? The MTConnect Machine Data Monitoring tool is free and first-rate!

It combines existing, free services, including Google Drive, to build a comprehensive machine monitoring tool. Users can view current machine statuses, uptimes, usage rates, and various other data from MTConnect-enabled machines in an easy-to-use Google Sheets format.

Combining tools you know

Google Sheets functions much like Microsoft Excel and is part of the Google Suite. Data are pulled from machine tools, translated using MT Connect, and then sent to your free Google Drive account where it is loaded into Google Sheets and displayed in a usable format.

The tool even includes a visual dashboard to help users better conceptualize daily and monthly usage. The data sets can be updated every 10 seconds and are stored long-term, so that users can observe patterns and trends in machine operation from any time the tool was active. The widgets that help make the data more accessible are built into the tool.

Built with small shops in mind

"This tool would be very useful for small shops, since it provides a free machine monitoring tool with minimal time investment," Matt explained. "It should take less than 30 minutes to set up a new machine using this tool."

The program has the capacity to receive data from a total of four machines. However, users can request an increase in application programming interfaces (APIs) from Google and potentially run up to 10 machines.

For every step of the machine monitoring set up process, Matt has developed detailed instructions. In fact, most of the relevant code and information can be copied and pasted into Google Sheets.

If built by outside software developers or engineers, this level of machine monitoring could cost tens of thousands of dollars. Today is a great day to make a free investment in your shop's future.

Now to figure out some AI for those 30-minute abs, no...APIs!



Watch now at www.imts.com/watch/video-details/TLC-Tom-Lonnie-Chat-30-minutes-for-Machine-Monitoring/354

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Please contact Kristen Hrusch, our Events Manager,
for more information and to register:
Kristen Hrusch - khrusch@ntma.org 216-264-2845
or visit www.ntma.org/upcoming-events

www.ntma.org/events



Emerging Leaders Conference - March 8-10th - Knoxville, TN

To ensure the future success of our businesses and our industry, we have to build the future today. NTMA gathers the best and brightest up-and-coming industry leaders to network, share knowledge, and brainstorm about tomorrow's manufacturing industry.



NTMA/PMA One Voice Fly-In - March 28-29 - Washington D.C.

NTMA's Advocacy at its finest! Members of the Government Affairs Team are invited to join The Franklin Partnership on Capitol Hill to speak with Senators and members of Congress to discuss policy and to promote and protect the industry with these key lawmakers.



MFG 2023 - April 26-28th - Phoenix, AZ

NTMA partners with the Association for Manufacturing Technology (AMT) for this interactive 3-day discussion of the technological advances, innovative strategies and real-life case studies. It's the perfect platform for manufacturers to gain and share industry knowledge.



International Tech Tour - May 6-12th - Germany & Switzerland

Take this opportunity to learn and observe global best practices that can be applied in your own company. We've scheduled strategic stops and tours to highlight some of Europe's most successful manufacturing companies.



Engage 2023 - October 18-21st - Indianapolis, IN

NTMA's signature event is not to be missed! Engage 2023, The Precision Manufacturing Conference, pulls together everything great about NTMA into three days packed with networking, advocacy, and learning. Join us as we 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.



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