

THE RECORD

Published by the National Tooling and Machining Association

INSIDE THIS ISSUE

Free, High-Impact Media
to Rock Your Manufacturing
Day Event - pp 20-21

MFG Day and the Future
of the Manufacturing
Workforce - p 24-25

and so much more ...

MFG

DAY

OCTOBER 1, 2021

THE PRECISION MANUFACTURING CONFERENCE

ENGAGE 2021

POWERED BY 

October 26-29, 2021 - Old Alexandria, VA

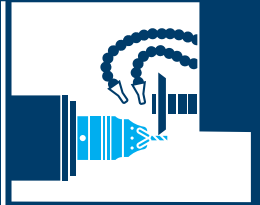
More information on page 10 - 13



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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 for advertising and editorial content.

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Upcoming NTMA National Events



Manufacturing Engage™ 2021
Tuesday, October 26 – Friday, October 29, 2021
Old Alexandria, VA

**STAY
ENGAGED**

Stay Engaged
Tuesday, November 2 – Friday, November 5, 2021
All-Virtual Event - Via GoToTraining



Chapter Leadership Summit 2022
Sunday, January 30 – Tuesday, February 1, 2022
The Andaz Hotel, Savannah, GA

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.

Upcoming Themes for The Record

October

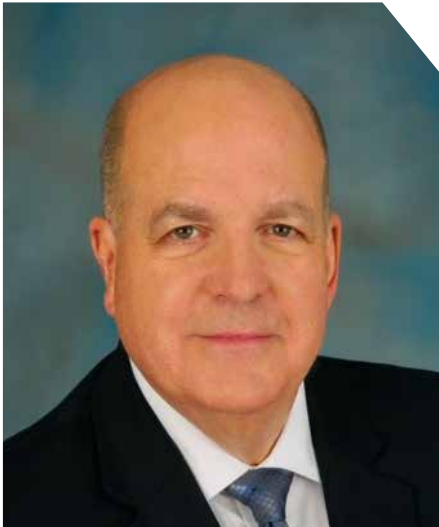
Smart Manufacturing

November

Apprenticeships: Developing the Workforce

December

The Year in Review



PRESIDENT'S UPDATE

As we focus on “Manufacturing Day” this month, and after seeing the results of 2020 and the pandemic, I’m not sure I’ll ever look at “Manufacturing Day” the same.

I, and I believe most, saw “Manufacturing Day” as a day we opened up our companies to show local students and parents, and our communities at large, what manufacturing is today. But today, I see this key event for our industry through such a larger lens. That lens sees it as the life-blood of the future of manufacturing. It is no longer just about our local community; it is about our country as a whole. It has never been more key to make known the importance of US manufacturing and the integral role it plays in our nation’s economy and employment.

A lens that opens manufacturing to nontraditional and underserved communities in our nation; to women; to the previously incarcerated; and to those looking to change or transition careers.

A lens that not only shows the next generation the vast array of opportunities within manufacturing, but highlights the importance that the parts we make play in their everyday lives, as well as the role innovation and creation plays in our future.

A lens that shows people how highly sophisticated and precise the equipment we use is and how clean our facilities are – and a lens that shows an environment where teamwork and commitment are rewarded.

The most important lens we must show the potential future workforce is to map out the journey – and to show them that the journey is possible and accessible for them if they choose to accept the challenge. That journey must include the training opportunities, the potential compensation opportunities, and a realistic timeframe.

They must know there are associational, educational, and company training programs waiting for those

who want to take the opportunity for themselves and their families. We must give them all the opportunity to see that the future is in their hands and US manufacturers are here to support, encourage, and most importantly employ.

All of us must look through these important lenses and realize we are on a course of a manufacturing shortage of workers. We must come together and understand that if we all do not do our part, our shops, as well as our country, will suffer.

Let’s all do our part this “Manufacturing Day” and remember “We Are Stronger Together.”

Roger Atkins, President – NTMA



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Congratulations to Apolonio Rodriguez of the NTMA SFBA Chapter



The SFBA NTMA Chapter would like to congratulate Apolonio Rodriguez from Cepheid as he has successfully completed the six series, 19-course, NTMA-U program and has earned the NTMA Graduate Certificate on 7/27/21.

If you would like more information on the NTMA-U apprenticeship program, please contact NTMA-U's program coordinator, Alice Overton at aoverton@ntma.org.



In Memoriam: Jerry Lynn Gerardot



Long-time member and NTMA San Francisco Bay Area supporter, Jerry Lynn Gerardot, passed away on July 15th. Jerry sponsored events, participated in many member events, and was a loyal associate member in the NTMA SFBA Chapter for many years.

Jerry took over Western Tool & Supply at the age of 25, right after his father's death. At that time, Jerry had 12 employees at their Oakland location. From there, Jerry grew the business - and today they have 11 sales branches in 6 states with 200 employees. Jerry was a huge advocate for NTMA, and was instrumental in helping re-invigorate the SFBA NTMA Chapter in 2010. He was known throughout the industry as not only a key leader but a generous and kind man. Jerry is survived by his wife Judy, his son Jason, his daughter Jennie and his sister Cynthia. NTMA offers its condolences to the Gerardot family, Western Tool & Supply, the San Francisco Bay Area Chapter. In lieu of flowers, the family is accepting donations in Jerry's name that will be forwarded to the foundation he supported. Donations and cards can be mailed to: PO Box 579, Clements, CA 95227.



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New Member Highlights



ANOVA INNOVATIONS

Northwestern Pennsylvania Chapter Member

Anova Innovations specializes in mold design services that focus on engineering, and the strategic use of 3D printed metal inserts, and inspection services to enhance a molds productivity and improve the molded part quality.

Anova Innovations was created with a single purpose in mind: to become an industry-leading solutions provider for the injection molding industry. By applying advanced engineering principles in mold design and pioneering the strategic use of 3D Steel Printing. This method allows us to overcome traditional boundaries and propose innovative solutions that previously were not possible. Supported by an accomplished staff of technical and commercial professionals, we understand the challenges and demands of the industry. Whether it be medical, packaging, or consumer goods, Anova is positioned to help you add value to your organization.

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www.anovainnovations.com



TOLEDO STEEL SUPPLY, INC

TOLEDO STEEL SUPPLY, INC.

Western Lake Erie Chapter Member

Toledo Steel Supply, Inc. was started in 2012 by Greg Forrester to be able to provide quality steel burnouts and processing to the Indiana, Michigan, Ohio area. Toledo Steel has come a long way starting with only five employees who were dedicated to their customers. TSS had modest beginnings, originally renting a space in a coil processing company's shop. They now own that same building and have completed a second building 20,000 square feet addition for a total work area of 75,000 square feet. Toledo Steel is committed to its customers and is always looking for ways to increase efficiency to improve lead times. They Installed a new 120" x 720" ALLtra Burn Machine with 400-amp Hypertherm Plasma and increased grinding capabilities by adding 60" and 84" Blanchard Grinders. TSS employs three working cranes and has a delivery fleet including three new trucks.

TOLEDO STEEL SUPPLY, INC.

222 Lavoy Road

Erie, MI 48133

www.toledosteelsupply.com

NTMA Welcomes Its Newest National Associate Member: High QA, Inc

NTMA is proud to welcome High QA, Inc. as its newest National Associate Member!

High QA is the leading provider of integrated quality management software (QMS) for manufacturing. Incorporating High QA 360™ software allows any size company in all major manufacturing industries to automate and optimize the manufacturing quality process. From ballooning drawings and creating inspection plans through to inspection data collection, analysis and reporting Inspection Manager streamlines quality control and management.

By providing quality insights above and beyond pass/fail, eliminating human interpretation errors, and reducing quality control bottlenecks, High QA 360 software creates an unmatched path for APQP/PPAP requirements. The entire quality process is integrated into one comprehensive software that creates an efficient manufacturing facility with solid partnerships and seamless collaboration with supply chains.

High QA software solutions ensure products meet specifications, are delivered on time and comply with all applicable standards. With extensive industry

experience and knowledge, High QA keeps its customers and partners at the forefront of Quality 4.0 and manufacturing technology.

Looking for more information? NTMA members can visit www.highqa.com or contact the High QA sales team at: (888) 727-1266.



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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

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

For sponsorship opportunities contact Kelly LaMarca: klamarca@ntma.org

Thursday, October 28th

General Sessions

Wednesday, October 27th

1:30pm-2:30pm General Session 1

Top Shops: What Drives High Performance in Machine Shops

Michael Guckes – Chief Economist/Director of Analytics at Gardner Intelligence



Gardner Intelligence took the results of all the previous Top Shops respondents, which includes more than 3,000 shops, and used sophisticated modeling techniques to determine what really drives high performance at machine shops. The presentation will cover the key drivers of success at machine shops regardless of the type of work they perform.

Michael has been in the economics and industrial space for 20 years. During the last 5 years he has been with Gardner Intelligence managing and reporting the Gardner Business Index. He has extensive experience in forecasting and modeling using advanced statistical techniques. He has successfully applied his expertise at multi-billion dollar companies in the construction, banking and insurance fields. Michael received his BA in Economics and Political Science from Kenyon College and his MBA from The Ohio State University.

2:45pm-3:45pm General Session 2

Winning the War for Talent

Christopher Czarnik – Author, Business Trainer



It is a mathematical certainty for the next decade that there are not enough people in the U.S. to fill all the open positions that are being vacated by 10,000+ Baby Boomers that retire EVERY DAY. There will be WINNERS and LOSERS in the War for Talent. This presentation will focus on zero-cost strategies that your organization can start implementing tomorrow to make your company WIN.

Chris Czarnik is a national career search expert with 15 years of HR, training and motivational speaking experience. He's known across the globe as the creator of an innovative approach to job search known as "The Human Search Engine"® and for "Winning the War for Talent," a transformative approach to hiring and team growth and development. Chris currently serves as the subject matter expert on recruiting and retaining talent for Vistage Worldwide, the world's largest executive coaching and peer advisory organization bringing together leaders to learn and grow. Chris' process was introduced to the 113th Congress as a national job search model.

2:00pm-3:15pm General Session 3

The Washington Agenda for Manufacturing in America

John Guzik – Founding Partner of The Franklin Partnership
Omar Nashashibi – Founding Partner of The Franklin Partnership
Paul Nathanson – Senior Principal of PolicyResolutionGroup at Bracewell



Throughout 2021, politicians in both parties have worked on policies to increase manufacturing in America and creating a more self-reliant supply chain. What does this all mean for precision manufacturers and their customers? What progress are the White House and Congress making? How will the government pay for the increased investments in U.S. innovation? The NTMA team from our nation's capital at The Franklin Partnership and Policy Resolution Group at Bracewell will provide their unique insights into the latest on infrastructure, tax increases, trade and tariffs, and the increased emphasis on workforce training, apprenticeships, and advancing careers in manufacturing.

John Guzik

John Guzik is a founding partner of The Franklin Partnership with over 20 years of Capitol Hill and campaign experience. Previously, John served as Chief of Staff for Ways and Means Chairman Dave Camp. He was the top legislative strategist working on tax, trade, health care, transportation and agriculture issues. John also works closely with the Senate Finance Committee on health care, tax, trade and many other issues important to his clients.

Omar Nashashibi

For nearly ten years, Omar Nashashibi has worked with clients, members of Congress, agency officials, public policy foundations, non-profits and media in Washington, D.C. A founding partner of The Franklin Partnership, Mr. Nashashibi works with members of Congress on behalf of his clients on a variety of issues from trade to federal funding opportunities to telecommunications.

Paul Nathanson

With more than 25 years of experience in strategic, crisis and corporate communications, Paul Nathanson's focus is on reputation management, message development and implementation, public policy analysis, media relations and strategic counseling services for a range of U.S. and international clients. He assists clients in formulating arguments in persuasive ways and ensures that clients' views are heard and understood by their target audiences, including Members of Congress, policymakers, the news media and the public.

Friday, October 29th

8:30am-9:30am General Session 4

How Business can Use Data to Confidently Move Forward in Unprecedented Times

*Michael Guckes – Chief Economist/
Director of Analytics at Gardner
Intelligence*



The economic rebound of 2021 has in large part been powered and sustained by unprecedented government largess. This has resulted in shifts and shocks in consumer behavior that have drastically altered business activity for manufacturers around the world. Furthermore, the outlook for the U.S. economy in the near-term is complicated by the simple fact that the economy must also transition back towards being predominately powered by the private sector. It will take shrew and tactical thinking by business leaders to successfully navigate this transitional period. Gardner Intelligence's presentation will provide NTMA members with a clear picture of today's metalworking manufacturing landscape, actionable insights, and practical resources (some even freely available) that you can use to monitor changing business conditions for yourself.

Michael has been in the economics and industrial space for 20 years. During the last 5 years he has been with Gardner Intelligence managing and reporting the Gardner Business Index. He has extensive experience in forecasting and modeling using advanced statistical techniques. He has successfully applied his expertise at multi-billion dollar companies in the construction, banking and insurance fields. Michael received his BA in Economics and Political Science from Kenyon College and his MBA from The Ohio State University.

9:45am-10:45am General Session 5

The Impact of Dominating Trends in Manufacturing on Your Shop

*NTMA Member Panel - Moderated by
Pat McGibbon - Chief Knowledge Officer,
Association for Manufacturing Technology*



Both the immediate and long-term future of the manufacturing industry will be defined by the development of a number of ever-evolving and prominent trends. These trends have made a significant impact in 2021 and are poised for effective operations in years to come, so it's critically important for manufacturers to develop a keen understanding of what they are, how they will grow over time, and how they will impact the industry and the customers it serves.

With all of the twists and turns of the past 2 years, came valuable lessons that helped manufacturers get back on track and develop new strategies for growth and connecting with workers in new ways. Patrick McGibbon, Chief Knowledge Officer at AMT, facilitates an all-star NTMA member panel where shop owners will discuss and dive in with the details on new technologies they are utilizing and implementing in their shops and how they are benefiting their bottom-line results.

Patrick McGibbon was promoted to Chief Knowledge Officer for AMT in early 2019. As CKO, Pat is the association's chief economist, ombudsman, and a member of AMT's Strategic Alignment team. He heads survey expansion projects, inter-association collaboration in business intelligence, R&D on intelligence projects, and is the staff liaison for AMT's Economics & Statistics Committee and AMT/USCTI's Joint Statistics Committee.



Breakout Sessions

Actionable Sales and Marketing Efforts to Build Your Digital Foundation

Matt Sordillo – Co-Founder & Head of Marketing Services, Paperless Parts



This high energy and interactive session will cover:

- Sales Tips and Tricks
- Website Basics
- Creating and Leveraging Business Pages
- LinkedIn Best Practices

Resource links will be made available so you can take action on the information shared.

Matt Sordillo lives and breathes job shop marketing. He works closely with job shop owners to provide the tools necessary to compete in today's increasingly digital business world. He is a marketing professional with 10+ years of experience in building, growing and improving marketing strategies to increase revenue for machine shops. Previously, he was the Head of Marketing at RAPID Manufacturing – the CNC machining and sheet metal shop that he helped grow from \$7M in revenue into a \$50M company that was eventually sold to Proto Labs, Inc. (PRLB) in 2017 for \$120M. Today he works with shops from California to New Hampshire to build up their digital marketing presence through content development and deployment.

The Dark Factory – Benefits, Challenges and Implementation Strategies

Panelists include representatives from:



It has been the dream of many manufacturers to use a set-it-and-forget-it mindset for production. Simply show up to work, set the machines in motion, flip off the lights, and head out the door. No workers. No humans in the building at all. Just machines doing what they do best—accurate, repeated tasks at speeds far faster than any human. These 24-hour production facilities sound like pure fantasy, but they are a reality today in manufacturing facilities spanning the globe.

Join us in this session as Industry Experts discuss the benefits, challenges and implementation strategies to introduce and maintain lights out manufacturing in your facility.

Leadership Workshop – Gratitude Strategies to Boost your Leadership and Lift Your Life

Lisa Ryan, CSP – Founder & Chief Appreciation Strategist, Grategy LLC



When leaders take the time to recognize and appreciate their peers and their staff members, retention, productivity and overall work satisfaction increase dramatically. When leaders learn to communicate their appreciation to their employees, they create stronger engagement levels throughout the organization. This session will show you how the art and science of appreciation in the workplace impacts managers, peers, staff and team members, making a noticeable difference in your workplace culture. Lisa will help you develop the leadership skills needed to connect with and engage your team.

As a Certified Speaking Professional, an award-winning speaker and author of ten books, Lisa works with her clients to develop employee and client engagement initiatives and strategies that keep their top talent and best clients from becoming someone else's. Lisa's expertise includes: strengthening workplace culture, improving employee engagement, increasing customer retention, and initiating gratitude strategies for personal and professional transformation.

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One Voice: Federal Government Advocacy Program

As United States manufacturing continues to navigate the unique challenges and changes brought on by the last year – and a change in Administrations - it remains important to have a partner in advocacy. NTMA helps provide this support by working closely with the team at One Voice: the combined federal government advocacy program representing small-and medium-sized business manufacturing in America.

With regulations, policy, and shop safety all constantly evolving, One Voice has a wealth of fantastic resources, developed to help keep your shop informed and prepared for whatever comes next. In addition to ongoing COVID-19 Response information – in line with any and all changes

that our industry may need to know – the team at One Voice also provides informative policy webinars, news releases, educational materials, video recaps, and much more.

Don't forget about the Talking with One Voice podcast – every episode, the One Voice advocacy team breaks down how the latest news from Washington impacts manufacturing businesses across the country. It's yet another way your shop can get quick, concise information on everything from tax development to loans and even workforce development issues. You can send in your key questions to be answered by emailing onevoice@policyres.com.

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 for more information.



NTMA is Proud to Support and Be a Sponsor of the 11th Annual Women in Manufacturing (WiM) SUMMIT

More than 650 manufacturing professionals will be gathering live in Cleveland, OH or virtually from October 4 - 6, 2021. Join us and participate in this

important event for those who have chosen a career in the manufacturing industry. The SUMMIT includes keynote speakers, plant tours at local manufacturing

facilities, networking opportunities, breakout sessions, and more! For additional event details and to register, visit: <http://ow.ly/44dr50FaYIZ>



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“As a career-long member of NTMA, I’ve been a beneficiary of industry talent funded in part by the NTMF. My business(s) have benefitted from the foundation and it is my desire to pay forward to future generations of precision machinists through a legacy donation. Including NTMF in my estate planning was easy and feels great. I’m comforted knowing that future generations of machinists will be possible through my lifetime and legacy commitments to NTMF.”

Eric Hagopian, President/CEO
Pilot Precision Products

Do you want to make a significant impact on the metalworking community that will help to close the manufacturing skills gap and leave a legacy for generations to come?

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Interested? Contact Bill Padnos, Executive Director
P: (216) 264-2828 E: bpadnos@ntma.org



Eric Hagopian, President/CEO - Pilot Precision Products

NTMF 2021 Scholarship Recipients

The National Tooling & Machining Foundation provides scholarships to inspire students to pursue educational pathways that will lead to manufacturing careers. In addition, all scholarship applicants must have a recommendation from an NTMA member in good standing in order to be eligible for consideration.

Do you know a driven, resourceful, and innovative student in the United States looking to explore a post-secondary educational pathway to a successful

career in manufacturing? If yes, the National Tooling & Machining Foundation Scholarship application process will re-open in January 2022.

For more information, please contact Bill Padnos, AMPED/NTMF Executive Director, at (216) 264-2828 or email at bpadnos@ntma.org.

Congratulations to the 2021 NTMF Scholarship Recipients!



Austin Atwood
Pasco Hernando State College
Major: Engineering Technology
Nominated by: Southern Manufacturing Technologies Inc



Christopher Bello
Mesa Community College
Major: Manufacturing Production Technology
Nominated by: Modern Industries



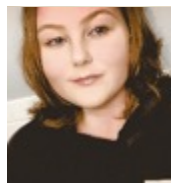
Jason Laschober
Mesa Community College
Major: AAS Manufacturing Technology
Nominated by: Empire Precision Machine



Caroline Salm
Campbell University
Major: Biology and Chemical / Pharmaceutical Engineering
Nominated by: Okuma America Corporation



Luke Schirmer
Vincennes University
Major: Precision Machine Technology & Advanced CNC Machining
Nominated by: Major Tool & Machine



Kaitlyn Fricke
Northeastern University
Major: Advanced Manufacturing Systems
Nominated by: Peerless Precision Inc



Clairese Kluba
Missouri University of S&T
Major: Mechanical Engineering
Nominated by: Kluba Machine LLC



Joseph Seiler
Community College of Denver
Major: CNC Machining
Nominated by: Denver Machine Shop / Kendo Inc.

Finding Out What Works for You

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

Watching my son figure out which treat he wanted at Voodoo Doughnut was excruciating for me. We waited ten minutes in line, half of the time staring at a giant poster of their donut offerings, followed by the other five minutes gazing at a display of each one. Even with all of this information available to him, he still could not make a decision on what to order. I could just feel the anguish from the people behind us in line waiting for my son to pick his one little donut – only adding to my stress. Finally, his decision was made, and that donut was in his belly in less than two minutes. Needless to say, we repeated this same scenario later in the day at the ice cream shop.

I could just imagine how shop owners must be feeling right now - just as overwhelmed with the decisions they'll need to make to address their future workforce. Everywhere you look, there are stories about the skills shortage, bursting with ideas on how you can solve it. No one has to tell you about how that gap is affecting your business. It must feel like every day, you figure out how to operate with at least one open skilled position. You look around your shop and realize about

53% of your workforce reaching retirement age. The shortage of workers is having an adverse effect on your bottom-line - and it is getting worse each year.

With all these worries and the influx of information on how to close the skills gap, it makes it hard to decide on what is your best course of action. You have limited time and resources to dedicate to this challenge, but it is important that you make an effort to build your own talent pipeline – and the decision on which way to address this must be one that is convenient and easy enough to attempt.

In this issue, there is an article from Edge Factor about the Rock MFG Day resources that they have developed – including information on how to host a student facility tour. Hosting an MFG Day student tour is a great way to connect with your local school, and to start building relationships with their students and teachers. If you are not able to open your doors this year due to the pandemic, you can also offer to come to the school and talk to the students in their classroom. If you are not comfortable with that,

always consider contacting the technology education teachers in your community and ask how you can be of assistance to them – including donating stock, providing guidance, and other reach-out opportunities.

Through AMPED, we also have a huge menu of resources and opportunities that you can take advantage of this year to make a significant dent in your company's skills gap. Whether it is being an NRL industry advisor, supporting a pre-apprenticeship program, or signing a letter to advocate for more CTE funding, you can make a difference in adding more students to the talent pipeline.

Not sure what is the best option on the workforce development menu for you? Please reach out to me at bpadnos@ntma.org or call me at (216) 264-2828. I will be glad to provide guidance to you on what is your best course of action that fits your unique position. I promise to have more patience with you than I had with my son – who, by the way, finally picked to eat a donut with frosting and crumbled Oreo cookies.

Good Help Is Hard to Find

By Mike Kartsonis

How many times do we keep saying good help is hard to find? It has been that way for many years – and it keeps getting harder.

National Tooling and Machining Foundation is one answer to help you get good workers. The NTMF supports many programs which educate and train our workforce, managers and future leaders - the NRL, NIMS, NTMA-U and various chapter initiatives. One could say that NTMF could also be called “National Tooling and Machining Future.”

NTMF is an investment in our future, our kids' future, and future generations to come. The time is critical to commit to NTMF to assure manufacturing will be alive for future generations. You can donate cash, stocks,

property, different types of trusts and life insurance to name a few.

In 2014, I personally donated appreciated assets with a simple call to my financial planner. This donation benefited me in multiple ways. Financially, I was able to save on taxes by writing the donation off. For years to come, my donation will provide scholarships to deserving students pursuing careers in manufacturing - ensuring that I leave a legacy to an industry that has done so much for me.

All NTMF wants to do is good. We have no hidden agenda and are here to keep this great organization alive and moving forward. We need your help and any donation would be greatly appreciated and valued.



Mike Kartsonis

Let me ask you a question: How do you define success? Some people think having lots of things is success. But I feel the most important things in life aren't things but people and helping make a difference in people's lives now. That is what NTMF is all about. So I ask you to please give to NTMF. Remember it is not what you take but what legacy you leave behind that defines greatness.

Please reach out to Bill Padnos, the NTMF Executive Director, or any NTMF board members with any questions or comments.

HEIDENHAIN's New MULTI-DOF Encoders Do More For Metrology Designs in Machining



Multi-dimensional measurement provides consistent quality

With the release of new MULTI Degrees-of-Freedom (MULTI-DOF) encoders, HEIDENHAIN offers machine manufacturers a better way to implement metrology designs to obtain multiple measurements simultaneously and facilitate correcting deviations on the fly. Conventional encoders offer one degree of motion, but these three new encoders do more to serve the demanding requirements of machines in the semiconductor and electronics industry, among others. They include the new LIP 6031 Dplus, the GAP 1081 and the MKV 1/9x30.

Traditionally, an encoder is only able to measure deviations along a single axis and although these can be corrected via some controllers, they can still be blind to common but unavoidable effects of guideway error or thermal linear expansion (to name a few) which would cause deflection along multiple axes. Using multiple reader heads allows for the detection of these deflections as in these new products, allowing for the necessary compensation at the inception and ensuring the integrity of the machine. Users of these high accuracy MULTI-DOF encoders can expect high reproducibility and consistent quality in their systems.

Highlights of HEIDENHAIN's three new MULTI-DOF encoders include:

- LIP 6031 Dplus - The LIP 6031 Dplus is based on the standard HEIDENHAIN LIP 6000 linear encoder. In essence, two LIP 6000 encoders have been integrated into a single device to read two graduation tracks on a measuring scale angled at $\pm 45^\circ$ relative to each other, thereby making it possible to measure in both the main direction and orthogonally to the main direction at a measuring length of ± 2 mm.
- GAP 1081 - The GAP 1081 is the first gap encoder from HEIDENHAIN. Rather than using interferometry for gap measurement, it utilizes HEIDENHAIN's own encoder technology enabling measurement of the gap between a mirrored scale and the scanning head. Out-of-plane measurement is thus very easy to implement in a metrology design.
- MKV 1/9x30 - HEIDENHAIN's MKV electronics enables the bus capabilities of the EnDat 3 interface by reading the position values of up

to four 1 VPP scanning heads. This is useful for multi-dimensional encoders where the readings from each head can be calculated and sent to the customer's controller on just a single cable. This also allows a reduction in the number of cables required and prevents the controller from needing to make such calculations.

About HEIDENHAIN

DR. JOHANNES HEIDENHAIN GmbH, headquartered in Traunreut, Germany, develops and supports motion control feedback solutions for the machine tool, semiconductor, electronics assembly and test, metrology, automation, medical, energy, biotechnology and other global markets. HEIDENHAIN employs approximately 6,000 people worldwide in its core business activities. The North American subsidiary is HEIDENHAIN CORPORATION, headquartered in Schaumburg, IL, and San Jose, CA, and has been serving the U.S. industry for over 50 years. Here nine company brands are represented.

More information at: www.heidenhain.us/about-us

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SHOPS



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Sourcing platform and a custom report detailing your
shop's strengths and opportunities



**"We ended up winning about a five
year contract just solely through
the exposure we received from the
Top Shops program."**

Matt Wardle, President, JD Machine

Take the Survey

survey.mmsonline.com/topshops

EDGE FACTOR PRESENTS

ROCK MFG DAY

STEAM EXPLAINS

Free, High Impact Media to Rock Your Manufacturing Day Event

By Larissa Hofman, Vice President, Edge Factor

One of our favorite times of the year is just around the corner: the official Manufacturing Day is booked for Friday, October 1, 2021! It's a day when schools, companies and workforce development leaders, and families across North America come together to celebrate the incredible careers and technology in the world of advanced manufacturing. The goal is to inspire the next generation of manufacturers by providing live and virtual tours of manufacturing companies and showcasing the career opportunities in this fast-paced industry.

Since 2015, Edge Factor has empowered 5,700+ Rock MFG Day event hosts with turnkey tools and high-impact resources to engage live and virtual audiences. This year is no different! The team at Edge Factor is launching the 2021 Rock MFG DAY Kit to equip companies, associations, workforce development leaders, manufacturing training programs and schools with multimedia tools to complement and enhance their MFG DAY events.

Edge Factor has created thousands of cinematic stories, videos, lesson plans, interactive activities, planning guides, Virtual Reality experiences, toolkits, and more, that are used in classrooms, homes, and at events to help students and job-seekers discover careers and prepare to enter the workforce. The online Rock MFG DAY Kit tools will showcase engaging e-learning media and real-life stories of manufacturers pushing back the edge of what's possible. This collection of high-impact media will inspire students and job-seekers to pursue manufacturing careers and learn what a "day in the life" looks like in specific manufacturing roles!

The 2021 Rock MFG DAY Kit will be available completely for free for everyone to watch, enjoy, and share the media from September 1, 2021 to October 31, 2021. The toolkit will include:

- An inspiring 15-20-minute Keynote Presentation by Jeremy Bout, Founder of Edge Factor and formerly a 5 Axis Programmer.

- "5 Days of STEAM" media including award-winning films, Career Profiles, walk and talk field trips/ tours of manufacturing companies called Virtual Workplace Experiences, and short videos that highlight how Science, Technology, Engineering, Art, Math topics are used in manufacturing, and soft skills videos.
- "How To" planning guides with step-by-step instructions on why and how to host an engaging event, and how to invite schools and companies to present on careers and training opportunities available in your community.
- Promotional tools to share the Rock MFG DAY Kit with your network and community.

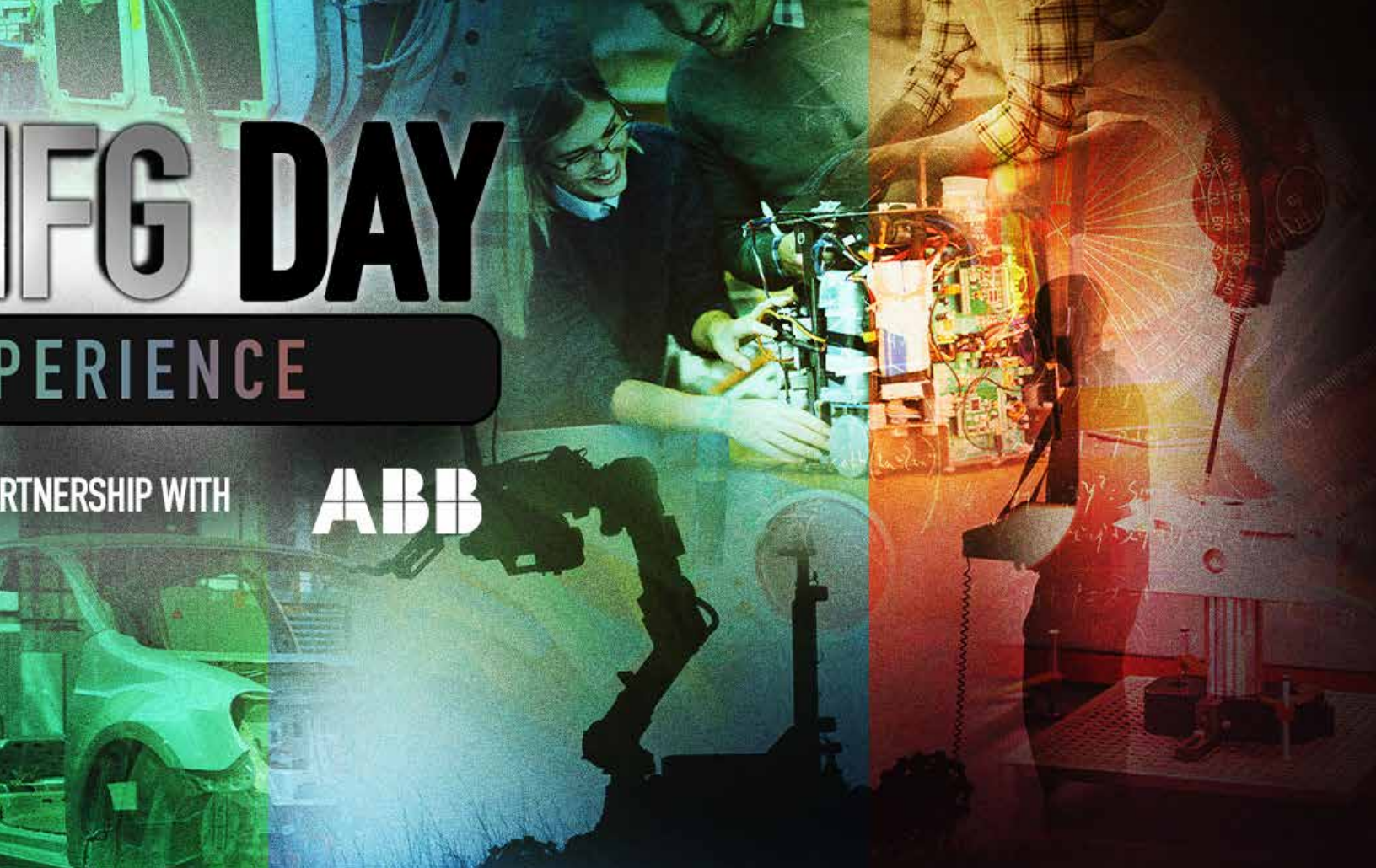
Top 7 reasons why your organization should host an MFG DAY event

"From classrooms and school assemblies to open door tours in manufacturing facilities, to stadiums of students to virtual community events . . . We've seen it all! Over the last 5 years, Edge Factor has partnered

MFG DAY

EXPERIENCE

PARTNERSHIP WITH



with thousands of organizations across the US and Canada to provide engaging tools for event hosts to engage their live and virtual audiences and showcase the extraordinary opportunities in manufacturing,” said Larissa Hofman, Vice President of Edge Factor.

In Edge Factor's experience, these are the top benefits that companies, community and workforce leaders, and schools have identified for hosting MFG DAY events:

1. *Inspire students to pursue careers in manufacturing*
2. *Reach parents at home and change antiquated perceptions of the industry*
3. *Engage with job-seekers and find potential new hires*
4. *Build relationships with local schools and educators*
5. *Help raise awareness of your company and what you do*
6. *Showcase the career opportunities you offer*
7. *Highlight the technology you use and how your company impacts the world*

While these are all great things to do, we understand that hosting an event is not easy! Planning and promoting your upcoming event, hosting a high-impact stage or keynote presentation, taking students on a tour, and trying to plan the logistics ... It can become a bit overwhelming, especially for manufacturers who are not typically involved with event planning.

The following industry and education leaders have partnered with Edge Factor to make the Rock MFG DAY Kit freely available: ABB, California Arts, Media & Entertainment, NTMA/ AMPED, Canadian Manufacturers and Exporters (CME), Mastercam, myBlueprint, National Coalition of Advanced Technology Centers (NCATC), National Institute of Metalworking Skills (NIMS), Precision Manufacturing Association (PMA), SME Education Foundation, and Women in Manufacturing.

These leaders are committed to helping manufacturing companies, schools, and workforce leaders with tangible, easy to use and share tools

to host an awesome live or virtual MFG DAY event and recruit the next generation of innovators and manufacturers.

The Rock MFG DAY kit includes everything you need to plan, promote, host, and follow up on your virtual or live MFG DAY event. It's plug and play - which means you can use parts or all of the toolkit on each of the days, or all of the days!

To register for the Rock MFG DAY toolkit, visit <https://offers.edgefactor.com/rock-mfg-day-experience>.

You will receive an email notification once the toolkit is available on September 1, 2021.

Questions? Feedback? Contact Edge Factor!
Feel free to message the Edge Factor team on Live Chat (edgefactor.com) or email info@edgefactor.com.

The Trifecta

By Michael Watkins, MBA/JD, EBITDA Growth Systems

American machine shops are experiencing the “trifecta” of (1) high prices, (2) supply shortages and (3) lack of skilled workers. So, what are they to do? How does a small-to medium-sized business (SMB) owner not only survive but thrive during these times? In order to thrive, the SMB owner must commit to making meeting the demands of the customer their primary objective. This requires communicating with the customer and collaborating with them to solve their problems. Keep in mind, your customers are facing the trifecta too!

High Prices

No one has a crystal ball to accurately forecast what inflation will do over the next 2-3 years. My bet is that we will continue to experience high prices for the foreseeable future. There are so many economic factors that are compounding to place upward pressure on interest rates and prices that it is reasonable to assume that we won't see pricing falling any time soon.

If high prices are going to become the norm (i.e., high prices are going to be more than temporary in nature) then SMB owners must execute a strategy to preserve their gross margins by passing along price increases to their customer(s). Effective customer communication shall be the key. Customers hate surprises, so the earlier that you are able to communicate a price increase, the better. The communication should center around the impact that the increases in labor, materials and 3rd party processing are having on your company's pricing. I would suggest being as transparent with your customer as possible – letting them know that you have experienced a 12-15% increase in your costs and that your company will need to pass along a 12-15% increase in your pricing in order to maintain profitability.

Supply Shortages

The economics of supply and demand dictate that shortages in supply will be followed by an increase in prices until other companies jump into the fray in pursuit of the higher revenue. When enough companies are producing product supply starts to match demand and prices level out.

Price increases that occur as a result of supply shortages tend to be shorter term (i.e., less than one year and probably closer to 3-6 months). In these instances, the SMB owner may or may not want to pass on their increased costs in the form of a price increase. There are so many questions to be answered:

- *Are you already making a really good [gross] margin on the parts?*
- *Is this a low-volume short-run part or a high-volume repeatable part?*
- *How easy would it be for your customer to move the part to another company?*
- *What is your relationship with your buyer?*
- *Is this customer strategic?*

My recommendation is that you evaluate each customer and make decisions based on some of the factors high-lighted in the above questions. If you are going to pass along the short-term increase in costs, know why you are doing it. In the same way, if you are going to eat the short-term increase in costs, you should know why you are doing that as well. Having done the analysis and made the decision(s) based on objective criteria, you can feel more comfortable with the direction that you are taking. You can also make mid-course corrections when the answer to one or more of the questions change.

Lack of Skilled Workers

Lack of skilled workers is the most difficult of the trifecta to solve. If there is any consolation, you should know that you are not alone. According to

tri·fect·a

[trahy-fek-tuh]

Noun

- 1) a bet in which the person betting forecasts the first three finishers in a race in the correct order.
- 2) a run of three wins or grand events.

“today is a trifecta of birthdays”

the Labor Department's most recent report, there are currently 854,000 positions currently unfilled in the manufacturing sector. It is difficult because there is little that an SMB owner can do to increase the supply of skilled workers. But while there is little that you can do to increase supply, there is much that you can do to decrease your firm's demand for such skilled workers. At the top of the list of strategies and tactics for decreasing your firm's demand for skilled workers is introducing technology, automation, and robotics. There is much that has been written with regards to making capital expenditures, forecasting revenues, and calculating ROI so we won't cover that here. Just know that you should adhere to industry best practices on how best to make capital investments.

A close second on the list is doing everything possible to make certain that you are retaining your existing employees. So many SMB owners feel that they can't afford to pay their employees more, provide their employees with training or provide their managers with training. Yet, those same SMB owners apparently can afford to lose good people and spend up to five times that employee's compensation to find and onboard a replacement. For the SMB that loses five people in a calendar year, the actual costs to the business are astronomical.

Let me conclude with this ...

Don't let the trifecta take you off of your game. Develop a strategy for each and execute on that strategy. The Institute for Supply Management (ISM) recently reported that the U.S. manufacturing sector reached its thirteenth straight month of expansion in June, even as these companies faced challenges on multiple fronts. In other words, “the trifecta is the game that is on the calendar, you may as well play it.”

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MFG DAY AND THE FUTURE OF THE MANUFACTURING WORKFORCE

By Julia Asoni, Senior Director of Student Engagement at The Manufacturing Institute

800,000

Jobs Open in Modern
Manufacturing Today

4 MILLION

Jobs Will Need to be
Filled by 2030

\$1 TRILLION

Potential Cost of Missing
Jobs in 2030

WORKFORCE: NTMA MEMBERS WANTED

A quick glance at workforce numbers in the manufacturing industry tells a very clear story: America needs more creators. According to a study released earlier this year by Deloitte and The Manufacturing Institute, the workforce development and education partner of the National Association of Manufacturers, the industry will need to fill 4 million jobs by 2030. And the skills gap could result in 2.1 million of those jobs going unfilled. The cost of those missing jobs could potentially total \$1 trillion in 2030 alone.



Julia Asoni is senior director of student engagement at the Manufacturing Institute. The MI grows and supports the manufacturing industry's skilled workers for the advancement of modern manufacturing. [Learn more about our efforts to excite the workforce of tomorrow at creatorswanted.org and themanufacturinginstitute.org.](#)

With 800,000 jobs open in modern manufacturing today, the need for talent is one of our biggest challenges. So, what can we do about it? Fortunately, a big part of the problem isn't very complicated to understand—we don't have enough students and emerging workers in our talent pipeline because they simply aren't aware of the incredible opportunities available to them in modern manufacturing.

At times, an outdated misperception of the industry is to blame. **This problem has a relatively straightforward solution:** we can help to shift perception of the manufacturing industry by opening our doors and letting students, parents, teachers and community leaders get a firsthand look at the rewarding career opportunities in modern manufacturing.

Each year, manufacturers across the country host MFG Day events on the first Friday in October and throughout the month. Organized nationally by the MI, MFG Day helps showcase the reality of modern manufacturing careers by encouraging thousands of companies and educational institutions to be part of the national movement. This initiative empowers manufacturers to engage with students and their influencers through events that typically include in-person and virtual tours of manufacturing facilities and interviews with employees. And it advances the goals of Creators Wanted, our industry's year-round campaign to build the workforce of the future.

We need NTMA members to be involved. While more than 90% of manufacturing companies are small businesses, smaller companies are underrepresented on MFG Day. The good news is you don't need a dedicated engagement professional or even a dedicated budget to pull off an incredible MFG Day event. Some of the most engaging and successful events have been hosted by manufacturing companies with fewer than 50 employees.

Hosting an MFG Day event is free and simple:

determine your audience (local schools or student organizations that you may have a relationship with) and whether you prefer to plan an in-person or virtual event this year. Pick a time and date, and once you have a rough idea of what you will show students, register your MFG Day event and let the MI's MFG Day resources guide you through the rest of the process.

Among the many toolkits and planning resources available to you are recordings of the four-part MFG Day planning webinar series held this year, including an introduction to MFG Day, a walkthrough of MFG Day resources, best practice tips from MFG Day hosts and messaging and promotion tips for MFG Day.

We thank NTMA for their continued dedication to making MFG Day a success, and we hope to see more members join MFG Day hosts this year by opening your doors and opening young minds to our industry.

By holding an MFG Day event, you'll not only join thousands of other hosts in showcasing modern manufacturing jobs and technologies but also highlight the benefits that manufacturing provides to your community and nation.

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Institute

www.creatorswanted.org

IMTS 2022 – Inspiring the Next Generation of Advanced Manufacturers

By Peter R. Eelman, vice president & CXO at AMT – The Association For Manufacturing Technology, the owner and operator of IMTS – The International Manufacturing Technology Show

With the City of Chicago officially reopened, McCormick Place has resumed conferences and will hold its biggest event: IMTS 2022, September 12-17. Preparations are underway, bringing on increased activity, energy, and interaction among the IMTS community, which not only includes thousands of manufacturers, but also thousands of students and educators.

Recently the IMTS show floor plan was unveiled, and the news is good. Even though it's one year away, IMTS 2022 will inhabit more than one million square feet of space – occupying all four buildings and all levels of the McCormick Place campus; and will continue to host the Smartforce Student Summit and co-locate with HANNOVER MESSE USA.

While manufacturers can start connecting with the biggest names and the smallest of innovators in manufacturing technology right now on IMTS.com, students and teachers can begin to explore digital technologies and career paths from leading industry experts.

As North America's largest manufacturing technology event (IMTS attracted 129,000+ registrants in 2018), IMTS is the premier venue for manufacturers, engineers, and students to discover the latest innovations, emerging technologies, and information on advanced manufacturing products, machines, software, and services.

As an increasing number of the nation's youth consider manufacturing technology careers, the Smartforce Student Summit at IMTS 2022 is poised to inspire thousands of students as it showcases the manufacturing technology classroom of the future. Attendees can expect interactive exhibits from leading industry manufacturers who will demonstrate breakthrough Industry 4.0 technologies such as additive manufacturing, augmented and

virtual reality, automation and robotics, digital twin, generative design, and more.

To help create an optimum experience, IMTS is organized into nine pavilions:

- Abrasive Machining/Sawing/Finishing
- Additive Manufacturing
- Controls & CAD-CAM
- Fabricating & Lasers
- Gear Generation
- Machine Components/Cleaning/Environmental
- Metal Removal
- Quality Assurance
- Tooling & Workholding Systems

Not only is IMTS replete with CNC and additive machine builders, but also features dozens of CAD-CAM, modeling and simulation software, automation and robots, metrology systems, and other digitally-enabled tools throughout IMTS.

In addition to exploring the floor plan, emerging technologies, and connecting with exhibitors online now, manufacturers and students can also broaden their industry knowledge by choosing from dozens of on-demand programs, including technology trends, industry experts, and original stories on IMTS.com/Programs.

GROWTH AHEAD

As we prepare for IMTS 2022, I am invigorated by our industry's courageous response to the pandemic. Manufacturers are increasingly adopting digital manufacturing to wrestle with supply chain and workforce challenges. I believe the manufacturing technology industry is bound for exceptional growth and will be energized by today's youth. IMTS 2022 will be a pivotal event to foster connectivity among people (and machines), and harness tech prowess to drive our industry forward. I urge you to visit IMTS.com/Show to help you navigate your future.



By Peter R. Eelman, Vice President & CXO at AMT Show

IMTS 2022 takes place Sept. 12-17, in Chicago Ill., will occupy one million plus square feet of new equipment, software, and products; and will continue to host the Smartforce Student Summit.



Smartforce Student Summit



Smartforce Student Summit



Smartforce Student Summit



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BETWEEN THE EARLY 2000s RECESSION AND THE GREAT RECESSION INDUSTRIAL MANUFACTURERS EXPERIENCED 300% HIGHER RECOVERIES IN CORPORATE PROFITS

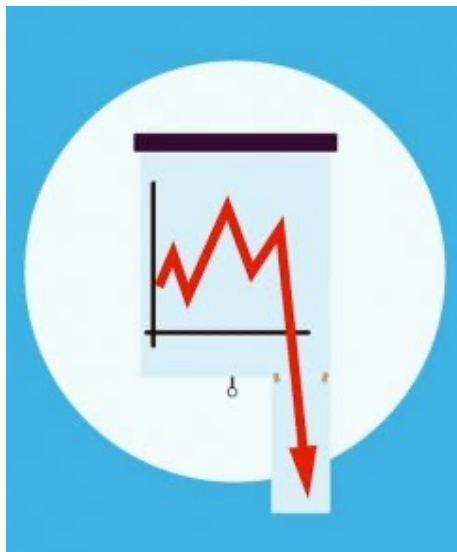
KRISTEN FOWLER

How Manufacturers Have Traditionally Recovered From Recessions

By Madilyn Movsesian – Marketing, Felber PR & Marketing

Since the COVID-19 outbreak in March of 2020, there has been a worldwide crisis amongst manufacturers. Like many other industries, manufacturers have been working tirelessly to conform to the new normal. Kristen Fowler for Forbes magazine states, “historic data demonstrates that manufacturing has borne the brunt of the financial damage in past U.S. recessions,” meaning that manufacturing has had the worst financial impact. As the world works to get back to normal and better the economy, the manufacturing industry is facing high levels of demand while simultaneously battling decreases in production in certain areas.

The manufacturing industry can lead the world out of another recession due to the fact that the industry is one of the first to recover from previous downfalls. Kristen Fowler also writes, “between the early 2000s recession and the Great Recession industrial manufacturers experienced 300% higher recoveries in corporate profits.” This large increase was one of the factors that led our country out of the recession. In 2021, the manufacturing industry is hoping for the same results in order to get back on its feet. In order for this to happen, manufacturers need to meet global supply chain needs and have a strong employee base. As we discussed in our recent blog, Endless Job



Opportunities with Manufacturers in the U.S., there are many tactics manufacturers can use in order to attract more employees.

The global supply chain issues that have surfaced from COVID-19 are ones that manufacturers will have to overcome in order to recover. Everywhere around the world products are being delayed due to the fact that there are shortages of workers and raw materials. It is crucial to weigh your options and possible alternatives in order to meet the demand of consumers. Fowler

writes in response to the initial COVID-19 shockwaves, “by devoting new resources and energy to building supply chains, manufacturers will drive economic growth in communities while mitigating the risk of international disruptions,” as a manufacturing company, it is critical to have a defined response to supply chain issues.

The manufacturing industry faced the lowest employment levels after COVID-19 surfaced. It is crucial to have a hiring method that will attract employees and meet the economic needs of production. Rapid hiring of quality employees will lead the manufacturing industry to success. To overcome the challenges created by COVID, manufacturers need to confront the supply chain and hiring shortage that is in today’s current society.

Interested in learning more about this tactic and how to further engage your prospects and customers?

*Call Rob Felber (330) 963-3664 or email
RobFelber@felberpr.com*

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Economic Update: 2021 August Recap

By Anna Rathbun - Chief Investment Officer, CBIZ

Throughout August, concerns about the pace of growth for the global economy dominated headlines. Consistent with the second quarter trend, it seems that the month of August was another step toward revising growth expectations forward. The major indices in the U.S. continued to climb during August, hitting multiple highs along the way, however the reflation trade continued its deflationary trend in August.

- Cyclically oriented small cap stocks underperformed the S&P 500, and value-oriented stocks also underperformed.
- From a sector perspective, Energy notably dragged on performance, but the Tech and communication Services sectors continued to charge ahead, leading the growth stocks for the month.

- The Delta variant is showing some influence on the economic fundamentals, however despite the concerns around it, corporate performance has been good, and positive guidance meant improvement in the valuation figures.
- On the international front, the MSCI EAFE Index registered positive returns, although some gains were dampened by the strengthening of the U.S. dollar for U.S. - based investors.
- In emerging markets, China continued to be a source of volatility, but the late month recovery of its equity market helped MSCI EM to surge ahead. India's stellar performance of +10.9% and a modest currency tailwind also aided in emerging market equity returns.
- In the fixed income markets, the flattening of the U.S. Treasury curve over the last few months took a pause during August. We saw a



steepening of the curve, but the curve actually flattened after the details of tapering intentions were revealed in the Fed's July meeting minutes and in Chairman Powell's speech at the Jackson Hole Symposium.

- The doubts about the reflation of the economy that bled into the credit markets in July extended into a good part of August. However, the bullish momentum that pushed the equity markets to multiple highs eventually helped credit spread to recover.

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November 2-5, 2021

STAY ENGAGED

Keep your key employees involved and join us the week after Manufacturing Engage for our **'Stay Engaged'** virtual event - coming November 2-5, 2021!

Our **Stay Engaged** content will take place via the GoToTraining platform - each day will include three hours of content, with each day focused on a different area of your shop. The first hour will be a recording of the Opening/Closing Keynote or a General Session from the conference, followed by interactive sessions for the remaining two hours.

Each day will cover one of the following areas:

- *Technology*
- *Sales & Marketing*
- *Workforce/HR Development*
- *Finance*


By registering for the in-person conference, you will have full access, company-wide, to participate in the **Stay Engaged** event. When registering, please add any additional attendees you'd like to participate in the virtual event.

Not able to join us in-person, but still want access to some of our great content?

You will be able to register yourself and anyone else in your company for just the **Stay Engaged** - virtual event. Registration for the virtual component is only \$495 - please ensure that **"Stay Engaged"** is marked as Registration Type.

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Because the NTMA is an affiliate member of the National Association of Manufacturers (NAM), NTMA members now have access to NAM Health Care: a new benefits offering that simplifies the health care experience for both you and your employees through a convenient, easy-to-use web-based platform. NAM Health Care allows smaller member companies to band together to take advantage of the enrollment efficiencies, administrative cost savings and product flexibility previously only available to larger manufacturing companies. Advantages include:

- **Access to more competitive product bundles.**
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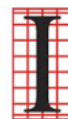
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