

THE RECORD

Published by the National Tooling and Machining Association

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Reinventing the Supply Chain
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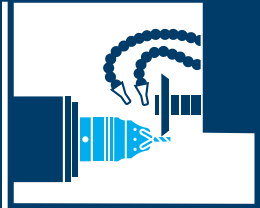
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and so much more ...

THE YEAR IN REVIEW



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THE RECORD

OPERATIONS & EDITORIAL

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

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Upcoming NTMA National Events



Chapter Leadership Summit 2022

Sunday, January 30 – Tuesday, February 1, 2022
Savannah, GA



Engage Summit West

Monday, March 21 – Wednesday, March 23
Costa Mesa, CA



Engage Summit East

Monday, June 6 – Wednesday, June 8
Philadelphia, PA



Emerging Leaders Conference

Monday, August 29 – Wednesday, August 31
Indianapolis, IN



Manufacturing Engage 2022

Tuesday, October 25 – Friday, October 28
Kansas City, MO

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 Carrie Marsico at cmarsico@ntma.org

Upcoming Themes for The Record

January

NTMA Member Value

February

Working "ON" or "IN" Your Business. Where Should You Focus?



PRESIDENT'S UPDATE

It's hard to believe that the end of the year is here. In 2020, we never thought the year would come to a close – and yet we look back at 2021 and wonder, “Where did it go?”

As the year comes to an end, I also end my second year as President of NTMA. It has been an honor and privilege beyond my expectations. Regardless of the tremendous challenges of the last two years, serving each of you and our industry has been humbling and rewarding.

This month we focus on “The Year in Review.” Obviously, I think we all would have hoped to be in a post-pandemic environment here at year's end, but there are still ongoing challenges, both physically and politically. The good news is, we, as an industry, have learned how to navigate these disruptions – including the disruptions prior to this one and the unplanned disruptions to come. Some ask how? The answer: we are creators, we are overcomers, WE ARE MANUFACTURERS who help build the world. If we stopped when things got tough, we all would have quit long ago. Yet we are motivated to the core to when it comes to challenges – and that is why US Manufacturing has led our country out of so many of its unplanned economic, political, and natural disaster downturns.

Looking back at NTMA this year, I have seen a resilient membership. A membership where most have survived the challenges and are now thriving, while others continue to face challenges to overcome, but are moving forward. Our membership – while we have seen a slight decline – will again post one of the best retention rates of the past five years. The rate of new members has grown from a drip here and there, to now a consistent trickle – with more contacting us about membership all the time.

With our focus on membership, we were able to add a dedicated Membership & Chapter Relations Manager. Carrie Marsico is no stranger to NTMA, having worked

with the association from 2010 to 2012, playing a big role in NTMA's NTMA-U program. Carrie's dedication to membership development and service is a great benefit to all.

Another area on which we focused attention this year was in our social media presence. To make this happen, we have contracted with Paperless Parts Marketing team to help handle our social media posts, blogs, and tweets. They are doing an awesome job – and if your company needs this type of help, we highly recommend them to you.

NTMA, just like our members, has had to learn to adapt and overcome. While we hear of other associations whose membership and finances have plummeted, we will finish this year financially with a positive operating surplus for the third straight year. We were able to participate in the second PPP loan forgiveness program, and coupled with outstanding membership dues payments, our cash needs will be met for the year without accessing our cash reserves, allowing them to grow in the market. One of the other big pivots we have made this year is the transition back from the “virtual” world of conferences, returning to “face-to-face” events. We finished the year with two strong in-person events; the Emerging Leaders Conference had a record attendance, and while Manufacturing Engage 2021 attendance was down, enthusiasm and great speakers made it a “must-attend event.”

Over this past year, we have continued to grow and strengthen relationships with our Industry Partners, Affinity Partners, and Association Partners. All of these partnerships have put NTMA in a stronger position to move forward with their help and support. The other half of maximizing these strengthened relationships is for you – our members' utilization of these partners' products and services. Our focus in these relationships is to bring the greatest value to our membership – and to position NTMA to be an industry-leading association for all small-to-medium-size manufacturers.

One of the bigger initiatives taken by NTMA this year is the commitment to a new association management software conversion which will enhance our association and membership management capabilities into the future. This new system, Impexium, will allow direct membership access to company profiles, payments, event registration, and NTMA updates – and will allow NTMA to better collect combined membership data, such as industries served, software used, employment numbers, and other key indicators. This focus on data will help to position NTMA to report on the combined contribution of our US Manufacturing community.

As you can see, it's been a busy year for NTMA and for NTMA members. It's been because of our members' support that we have been able to make these needed changes – and allowed us to renew our areas of focus. The exciting news is we have even greater plans for 2022, AND THOSE PLANS INCLUDE YOU. So, stay tuned for what's next in NTMA. (Just a hint... it will be all about membership GROWTH.)

I believe our ultimate goal is to be the “VOICE OF THE SMALL-TO-MEDIUM SIZE MANUFACTURING COMMUNITY.” We manufacturers are the heartbeat of our nation's economy and our nation's employment. It's time we grow and join together with one VOICE and take our seat at the table to direct US manufacturing policy that directly affects our businesses. We are our nation's answers to reshoring and onshoring, supply chain disruptions, and made in America initiatives.

Let us always remember, We Are Stronger Together.

Roger Atkins, President – NTMA



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Change Is Coming to Your NTMA Membership Experience

By: Doug DeRose, Vice President and CFO, NTMA



I don't have to tell a shop owner how fast technology changes in the workplace today. This change happens across all industries – and, really, in every business that wants to and needs to stay competitive. The same is true at a trade association like NTMA; so when I tell you that we utilize technology that has been in place since 2010 for our CRM (AMS, or association management system for trade associations), you can understand how we feel light-years behind the technology curve.

I've been with NTMA since 2014 and we began looking at integrating a new system in 2018. Due to leadership changes, we postponed making a change until about this time last year. We received support from the EC, and with COVID-19 going on, we had

time to start the implementation. In early 2021, we selected Impexium AMS for our new system. As anyone who has been through a system change can tell you, it's a very invasive and time-consuming process. Our team has continued to deliver on member services while putting in the time to create a new AMS – one that will fit into NTMA's operating processes and ultimately improve the member experience.

We are now coming down the home stretch, and we are ready to tell our members about the change, when to expect it, and what to expect.

First, I can tell you that in December, NTMA staff will work, on the final steps of implementing Impexium. This will involve importing member data, verifying reports and queries work and testing regular system processes. Our goal is to turn the system loose to our members in early January. When we are ready, we will send all members a URL that will provide access to the new member portal – including some initial instructions on setting up a new account and managing your account online. Please note that due to timing we will be sending our member renewal invoices for 2022 in early January. We have typically

sent those in December; however, due to our system conversion, it will be better functionally to run this process after the new year.

Next, I can share some upgrades members can expect from our new AMS:

- Direct account management
 - Real-time access to account balances
 - Ability to change account information and user access on your own
- Ease of payments
 - Make payments online using credit cards or ACH at any time
 - Print copies of open invoices as needed
- Improved online purchasing
 - Easy access to register for events and purchase education materials and other items

As we move closer to the go-live date, we will be sharing additional features and changes with you and NTMA Chapter leadership. We want to make sure the transition to the new AMS is as seamless as possible for everyone. Stay tuned and let us know if you have any questions.

Stay Connected to Fellow Members

As the manufacturing industry continues navigating successfully through recovery, staying connected with your peers and fellow NTMA members has never been more important. To help our members continue to come together to address key concerns and issues – NTMA Member Drop-Ins are back!

NTMA is hosting monthly "Member Drop-Ins" – unique opportunities for our members to meet and discuss complex problems, and to brainstorm ideas and solutions alongside fellow NTMA Members. These Drop-Ins, using Go-To-Webinar, have been fantastic ways to keep our members connected – and for each session, we will be joined by proven industry experts

bringing important knowledge, key information, and perspectives that are important for our member shops to learn about.

Our January Drop-In will take a look at the Value of NTMA Membership. We'll take a deep dive into the many benefits of being an NTMA Member – both tangible and intangible – that you can take advantage of to grow, improve, and foster your business.



Upcoming Member Drop-Ins are scheduled on the following dates:

Tuesday, January 11 – 2PM EST;

Tuesday, February 8 – 2PM EST

Please check your email and our social feeds for future invites, or contact NTMA's Member & Chapter Relations Manager Carrie Marsico, at cmarsico@ntma.org or (216) 264-2835

We hope to see you on the next Drop-In!

New Member Highlights



ADVANCED TURBINE COMPONENT MANUFACTURING, LLC
Arizona Chapter Member

Advanced Turbine Component Manufacturing, LLC (ATC MFG) was formed in December 2020 to acquire the assets of Benchmark Electronics' Turbine Business Unit, though we continue to operate the business as it had been operated for more than 25 years, including with the hiring of all of Benchmark's former employees. At ATC MFG, we specialize in very tight tolerance grinding of hot-section turbine components, including turbine blades, vanes, and seal segments. We also have milling and EDM expertise for when our customers' products require those operations. Our capabilities include extensive CNC and creep feed grinding, including a fully automated manufacturing line which utilizes 5-axis Makino G-7 machines, closed-loop Hexagon CMM machines and FANUC robotics integration.

Following our initial acquisition, we recently acquired the assets of CPP's machining business in Tempe, AZ which increases our capacity for larger parts and brings us into the Industrial Power Generation (IGT) industry with similar grinding expertise for similar turbine components. This acquisition also brought us ECM Stem Drill capabilities which is a very specialized and rare capability required for most 1st stage IGT turbine blades.

Combined, we have 40,000 square feet of manufacturing space and 46 employees and we have significant open capacity to take on new customers.

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PRECISION PARTS FAST
Rocky Mountain Chapter Member

Precision Parts Fast was started in 2021 by brothers Jason and Brian Korbek. Coming from a third-generation manufacturing family, Jason and Brian launched Precision Parts Fast as a rapid 3D printing and CNC machining custom manufacturing company serving the aerospace, defense, electronics, automotive, oil & gas, agriculture, laboratory research, medical, and consumer packaged goods industries. The company is ITAR certified. Specializing in prototypes and small to mid-volume production, Precision Parts Fast also offers design and manufacturing consultation services. Priding itself on its key values of precision and speed, most parts can be produced in 1 to 10 days. Precision Parts Fast places its number one priority on its customers and developing long-lasting, quality relationships.

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Connecticut NTMA Chapter Holds Successful Roundtable Event



The Connecticut Chapter of the NTMA's annual Roundtable Event was held on November 9th with special guests Colin Cooper, Chief Manufacturing Officer of CT, and Chris DiPentima, President & CEO of CBIA.

The Connecticut NTMA sends a special thank you to their newest Associate Member and Food Sponsor, as well as to NJ Goulet III – President of the CTMA and Mechanical Engineer with United Centerless Grinding for his fantastic job as moderator.



MANUFACTURE YOUR LEGACY



“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

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Eric Hagopian, President/CEO - Pilot Precision Products

Fastems Launches Version 8 of Its Manufacturing Management Software (MMS)

MMS Version 8, the newest release of NTMA National Associate Member Fastems' Manufacturing Management Software (MMS), boosts CNC automation intelligence to the next level by introducing a new MMS Insights view, giving practical ideas and suggestions on how to improve CNC production. In addition, Fastems has developed the user experience and added functionalities that support an economical use of modular fixtures, allowing a higher production mix with smaller work holding investments. Version 8 will be available for new and as an upgrade to existing Fastems automation systems during the spring of 2022.

The new MMS Insights module provides CNC companies with numerous highlights and suggestions on how to improve their production processes based on data gathered from the automation system, including all the integrated machinery and data systems. MMS overviews the whole production and comes up with suggestions such as adding or removing certain tools or fixtures based on usage rates or updating NC-program runtimes for more precise order scheduling. It builds upon the functionality of the earlier MMS versions which offer users a full suite of options for automated production planning, including production resource preparation and an indication of missing resources such as cutting tools, raw materials, NC programs, or workholding. This enables operators to execute the planned production in a proactive manner, leading to higher machine utilization, shorter lead times, and less work-in-process.

For manufacturers using the simple pallet automation systems like Flexible Pallet Container (FPC) or

Flexible Pallet Tower (FPT), Fastems is introducing a new single-screen user interface with drag-and-drop pallet ordering, and a new MMS EasyRoute function that allows the operator to bring entirely new workpieces into production in under one minute. In addition, for the manufacturers that do not produce purely based on customer orders, there is a new Order Generator that automatically creates production orders based on rules defined by the user. For instance, the system can automatically maintain a certain stock level or produce a recurring batch at regular intervals.

For manufacturers producing high mix and therefore needing a lot of fixtures, Fastems has built a new optional Fixture Resource Management module. It allows the use of modular fixtures that enable a higher production mix with fewer pallets. Using modular fixtures can generate cost savings on fixture investment, space savings on pallet storage, and time savings with less fixture building work.

"MMS is what makes Fastems, automation the best in the market in terms of our customer's capacity utilization levels, ability to deliver just-in-time, and produce a high mix with low volume economically. We are and want to continue as the market leader in CNC automation for any machine tool brand, and the efficiency, integration capabilities, and usability are what make the difference. With Version 8, we've enhanced our pallet handling features based on customer feedback, resulting in a new single-view user interface for the simple CNC automation systems, and the ability to bring new workpieces into production in under 60 seconds. The Insights module helps manufacturers to make data-based decisions

with real-time reports on resource usage and the system data accuracy. Since many of our customers produce high mix, we have also introduced significant improvements for modular fixture management that can save a lot of money and time," said Mikko Nyman, Fastems CEO.

Fastems hosted a live launch event to demonstrate the MMS Version 8 to those interested in learning more about innovative ways to optimize their manufacturing processes. The online event took place Tuesday, November 30th at 12:00 GMT (London time in English), 9:00 CET (Berlin time in German), and 12 PM EST (New York time in English).

For more information, visit www.fastems.com, or call toll-free (866) 702-0611.

8760 Fastems

More About Fastems

Fastems supplies intelligent automation and digitalization solutions for high-mix-low-volume CNC manufacturing. We are an open integrator and a family-owned business with 40 years of automation experience, over 4,000 installations and main markets in Europe, North America, and Asia. Our mission is to help metalworking manufacturers improve their productivity and profitability. Fastems' main application fields are pallet and robotic automation – always equipped with our industry-leading production planning and execution software MMS. We also have solutions for automating the production and resource planning of stand-alone machine tools. We support our systems with a wide range of services.

The Great Wake-Up Call



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

I often think back to the Presidential Debate on Sunday, November 6, 2005, between Congressman Mat Santos and Senator Arnold Vinick. It was fascinating watching these two heavyweights highlight their differences about policy during a serious discussion. There were no back and forth personal barbs; it was all about their ability to lay out their visions for the future of America, and letting the voters make an educated decision on which candidate to support.

During the debate, Santos and Vinick were asked the typical question about job creation. Senator Vinick shocked the audience in his response: he stated that he would not create a single job as President of the United States. Instead, he would dedicate government resources and ease regulations to support the actual job creators: the business owners.

Fast-forwarding to 2021 – the US Economic Development Administration (EDA) recently announced the “Good Jobs Challenge” – which aims to get Americans back to work by building and strengthening systems and partnerships that bring together employers who have hiring needs. This comes in tandem with other key entities to train workers with in-demand skills that lead to good-paying jobs. The EDA has allocated \$500 million to support collaborative local and state partnerships that will create and implement industry-led training programs, designed to provide skills for and connect unemployed or underemployed workers to existing and emerging job

opportunities. Ultimately, these systems are designed to train workers with the skills to secure a union job or a quality job that provides good pay, benefits, and growth opportunities.

Similar to Senator Vinick, through the “Good Jobs Challenge,” the EDA is not looking to create new jobs. Instead, they want to provide the financial resources for industry leaders, educators, and officials to work together to:

- *Help establish a regional workforce training system comprised of multiple sector partnerships*
- *Develop the skills training curriculum and materials, and secure technical expertise needed to train workers*
- *Implement non-construction projects needed to provide workforce training and connect workers with quality jobs, including wrap-around services.*

The announcement of this grant opportunity has created a flurry of activity on the local level. The EDA is looking to award 25 - 50 grants and has workforce development professionals salivating over the potential of winning one of them. As a national organization, NTMA is unfortunately not able to apply for one of these “Good Jobs Challenge” grants. This makes sense: NTMA does not create jobs, but rather, our members do.

The grant applications are not due until January 26, 2022, which is a lifetime when it comes to the creation of a grant proposal. There is still time for you to raise your voice to ensure that those proposals include dollars for machinist training. Reach out to your local community colleges and workforce development organizations and tell them that you can offer good jobs to the next generation – along with those today that have the aptitude to work in the industry but just need a little encouragement.

It is okay to make a case for your own self-interest. Trust me, companies in construction, electrical, plumbing, and other industries are making their case on why training for working in their trades need funding – and precision machining must do the same.

The “Good Jobs Challenge” is the “Great Wake-Up Call” in America. It is an opportunity for the federal government to target funds to support local workforce development – and then get out of the way. This has been following a trend that I have been noticing all year: direct funds or tax incentives being made available to support companies in hiring new workers and upskilling existing employees. See for yourself at <https://ntma.org/programs/workforce-development/training-funds/> and take a moment to examine the workforce development programs offered in your state – and see how they support your individual training programs.

Please feel free to reach out to me at: bpadnos@ntma.org or call me at (216) 264-2828 if you need help getting started or if you have any questions.

2021 A Year In Review

By: Paul Nathanson, Senior Principal, Bracewell LLP

This past year was a continuation of adaption and change for all of us. As we all continued to adjust to a new normal, your team at NTMA worked to ensure that we were meeting members' needs. It was also a year of change in Washington, DC, and NTMA and its DC advocacy team were presented with new challenges and opportunities as the balance of power shifted in Congress and the election of a new President.

Here are five advocacy issues faced by NTMA members in 2021 and an overview of how these challenges were addressed by NTMA and our team in Washington, DC, as we worked with policymakers and elected representatives to support our members and the manufacturing sector.

From the beginning of the COVID-19 pandemic to today, NTMA members continued to help drive the US economy, including contributing to products that ensure the health and safety of all Americans. The NTMA team in Washington, DC, worked to ensure that members were provided the latest information on federal and state government COVID-19-related restrictions and other executive and regulatory actions, relevant legislation and agency rules by conducting webinars, providing numerous email updates and action alerts, and always being available to answer individual members' questions. Every day, our Washington team worked to ensure that NTMA members' heroic efforts were helped and not hindered by Congress and the White House.

NTMA's advocacy team worked closely with the Coalition for Workplace Safety to convey members' concerns regarding OSHA's Vaccination Emergency Temporary Standard (ETS), including meeting with OSHA officials for a preview of anticipated agency action. The advocacy team was also in contact with the Small Business Administration's Office of Advocacy about the ETS to ensure that the concerns and needs of small-and medium-sized manufacturers are considered when developing policy.

NTMA also pushed to increase COVID-19 Economic Injury Disaster Loans (EIDL) to \$2 million, and succeeded in eliminating the PPP loan "necessity questionnaire" for loans over \$2 million. While the COVID-19 pandemic continues to affect our daily lives, NTMA and our Washington-based advocacy team remain dedicated to providing members with the most accurate and up-to-date information affecting their workplaces, and fighting for benefits that will help all members succeed.



WORKFORCE

The challenge of recruiting and maintaining a skilled workforce only increased for the manufacturing sector in 2021, with new challenges created by the pandemic. NTMA and our advocacy team worked actively in Washington to obtain support from Congress to help prepare the next generation of manufacturing workers by increasing federal funding for technical training and apprenticeships. These initiatives received bipartisan support, a rarity in a politically polarized Congress.

Our team also met frequently with members of Congress and staff regarding the bipartisan infrastructure bill. The bill passed by Congress, does not increase taxes on American businesses. In addition, the reconciliation bill being considered by Congress includes \$6 billion for registered apprenticeship expansion as a result of our advocacy. The House of Representatives also passed the NTMA-supported National Apprenticeship Act of 2021 that will create an additional one million apprenticeship opportunities nationwide and allow for competency in addition to time-based learning.

NTMA's advocacy team continued to lobby in support of the College Transparency Act, bipartisan legislation that helps ensure students and families have clear information as they consider higher education opportunities. The bill modernizes the college reporting system by providing accurate reporting on student outcomes such as enrollment, completion, and post-college earnings across colleges and majors. NTMA also helped secure \$386 billion for Veterans Affairs retraining programs. Our team is also working with members of Congress on legislation that would create a business-related tax credit for employers who increase their expenditures for worker training.

As the labor market continues to change, NTMA and our advocacy team are working to educate members of Congress about the workforce needs of manufacturers, and the great careers offered by our industry. The NTMA advocacy team in Washington holds regular meetings with White House and agency officials to expand skills training and members of the team were appointed to the National Skills Coalition Manufacturing industry panel that issued policy recommendations to the White House.

TAXES

With Congress poised to approve new taxes to raise revenues to fund both COVID-19 relief measures and new initiatives, NTMA's team in Washington is meeting with members of Congress and staff to protect the interests of NTMA members, including lobbying against tax increases for pass-throughs and c-corporations, and working with coalition partners and Congressional allies to protect the 199a deduction. Our team succeeded in helping to prevent the elimination of a step-up basis for capital gain, preserving the current estate tax limit, and protecting Section 179 Equipment Expensing. Our work contributed to Congress approving a four-year extension of the Research and Development Tax Credit, enabling businesses to benefit from this important tax credit.

NTMA remains dedicated to opposing unnecessary and onerous tax increases on small businesses and preserving the important tax credits that provide members with the resources they need to reinvest in their businesses.

TRADE

There has been an unprecedented amount of turmoil in international trade over the past several years, with new tariffs placed on China to combat that government's unfair trade practices, as well as a range of tariffs and other trade restrictions placed on all US trading partners. Several disputes between the US and European Union have been resolved, and your team in Washington, has ensured that the interests of NTMA members are taken into consideration during these negotiations.

The NTMA team urged the White House to lift the Section 232 steel and aluminum tariffs on close national security allies in order to increase the supply of these essential raw materials, narrow the price difference between the US and the rest of the world, and reduce the growing lead times experienced by NTMA members and other steel-and aluminum-using manufacturers. The US has resolved this issue with the European Union, and the team continues to urge the Administration to work with other close trading partners such as South Korea and Japan to resolve

the 232 tariff dispute. An NTMA-endorsed bill was introduced in US Senate to reform the Section 232 tariff process.

The NTMA team in Washington has been working diligently to urge policymakers to take appropriate steps to combat China's unfair trade practices with policies that do not unintentionally damage US manufacturers. The team is continuing to monitor the Section 301 China exclusion list and we will continue to oppose eliminating tariffs on Chinese imports of tools and dies.

REGULATIONS

The NTMA Washington-team continues to fight against harmful regulations that create unnecessary burdens for our members. For example, the team filed comments opposing the new EPA's Benefit-Cost Rule, resulting in the elimination of the broad restrictions and requirements imposed on the agency. Our team is weighing in on new rules proposed by the Occupational Safety and Health Administration (OSHA) including the Indoor Heat Rule that would increase enforcement efforts on heat priority days to prevent heat-related illnesses and that could result in companies installing new engineering controls and providing protective equipment to employees.

As you can see, 2021 was a busy year on the advocacy front, and NTMA met the challenge, promoting policies that helped members cope with the pandemic, succeed in a volatile trade environment, and build their workforce pipeline for the future. NTMA extends its thanks to all our members who contribute to the NTMA Government Affairs Administrative Fund (GAAF) and the NTMA Political Action Committee. Your support made possible our successes in Washington, DC.

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ENGAGE 2021 RECAP

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NTMA's Engage 2021 Precision Manufacturing Conference – held October 26-29, 2021 – marked the first time that NTMA members were able to gather in person in more than a year. The conference was held just outside Washington, DC, in Alexandria, Virginia, and brought together more than 125 attendees from 74 member companies for one of the first times since the outbreak of the COVID-19 pandemic. The meeting included top-notch speakers, trade show exhibits, charitable activities and a great deal of socializing and enjoying the sites of the Washington, DC area.

“We were thrilled to bring NTMA members together in person,” said NTMA President Roger Atkins. “There is simply no substitute for the collaboration and networking opportunities that take place when we interact face-to-face. Ensuring that attendees felt comfortable and safe during our time together was a top priority and we thank attendees for following all appropriate safety protocols.”

Engage 2021 included five general sessions and several breakout discussions designed for a variety of industry roles on topics ranging from Washington's agenda for US manufacturing to strategies for communicating gratitude and appreciation to employees. Building on NTMA's values and traditions, attendees were given the opportunity to hear from top industry experts including Michael Guckes, Gardner Intelligence Chief Economist and Director of Analytics;

Christopher Czarnik, author and business trainer who led a session on “Winning the War for Talent”; and many more. The conference also included a Washington update by Omar Nashashibi and Paul Nathanson, two members of NTMA's One Voice advocacy team in Washington.

Gathering in person also meant that attendees were able to participate in more networking events than ever, including a walking tour of Old Town Alexandria, a boat cruise on the Potomac River highlighting famous landmarks of D.C., and other networking events throughout the conference for attendees to create meaningful and long-term business connections. Conference attendees were also able to put their technical and teamwork skills to the test in a tech Olympics and partake in the fourth annual Cornhole tournament.

More than 80 NTMA members used their hands-on skills to assemble bicycles for children in need in the Washington, DC area as part of NTMA's community Build a Bike event organized with the Boys & Girls Club of America of Greater Washington. It took 90 minutes for the teams of manufacturers to assemble 15 bikes and also create cards for the children who will receive the bikes. The bikes were accepted onsite by Mike McDonald, Regional Vice President at the Boys & Girls Club of America of Greater Washington and immediately delivered to a Boys & Girls Club in Manassas, Virginia, which provides before- and after-school care, including homework help, meals, and sports activities for area kids.

During the conference, attendees were able to come together to celebrate a fun night of bowling, bocce, and casino games at Pinstripes in Washington, DC to help raise money for NTMA's Government Affairs Administrative Fund (GAAF), which helps fund NTMA's advocacy initiatives in Washington, DC.

“After so many months of virtual meetings and calls, it was just great to be together,” said Atkins. “NTMA members should check the website and their emails as we are in the process of organizing many more exciting in-person events in 2022.”



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NTMA Members Build and Donate Bikes for Boys and Girls in DC Area

Dozens of manufacturers used their hands-on skills to assemble bicycles for children in need in the Washington, DC area during a special event organized by the National Tooling & Machining Association (NTMA) at its Engage 2021 Precision Manufacturing Conference held October 26-29 in Alexandria, Virginia. NTMA's Build a Bike event was organized with the Boys & Girls Club of America of Greater Washington and was attended by more than 80 NTMA members. It took 90 minutes for the teams of manufacturers to assemble 15 bikes and also create cards for the children who will receive the bikes.

The 15 bikes were accepted onsite by Mike McDonald, Regional Vice President for government relations at the Boys & Girls Club of America of Greater Washington. The bikes were delivered to a Boys & Girls Club in Manassas, Virginia which provides before-and after-school care, including homework help, meals, and sports activities for area kids. The bikes were immediately made available and were very popular, particularly the orange and black ones, which arrived on site the day before Halloween.

"Engage 2021 was one of the first opportunities for NTMA members to meet in person in more than a year, and the bike building event was a reminder of the great things that can happen when we are all together," said NTMA President Roger Atkins.

"We are grateful to everyone who attended and participated in the Build a Bike event and also thank the Boys & Girls Club of Greater Washington for helping us give back to the greater Washington, DC community."

"On behalf of the Boys & Girls Club of America of Greater Washington, I want to thank NTMA and its members for this donation," said McDonald. "It was great to observe first-hand the enthusiasm and teamwork by NTMA members at the Build a Bike event. The bikes are already being put to good use by the boys and girls."

More information about the Charity Bike Building Event and other Manufacturing Engage 2021 programs can be found at manufacturingengage.org.



Reinventing the Supply Chain of the Future

By: Bill Berutti, CEO, Plex

There's only one word to describe today's state of supply chains across the globe. Unstable.

The economic turmoil caused by the pandemic and subsequent disruptions (the Suez Canal blockage, semiconductor shortages, etc.) has exposed vulnerabilities in supply chains and left many questioning what supply chains of the future will look like. In short, supply chains as we know them will never be the same. That answer may be unsettling but at the end of the day, those vulnerabilities were always there and needed to be addressed. Unfortunately, it took a once-in-a-lifetime global pandemic and other extreme disruptions to garner the much-needed attention.

As manufacturers take a fresh look at their supply chains and what they plan to do next, it might be just as important, if not more important, to think about what they must stop doing. Here are three things manufacturers should stop doing in order to modernize the supply chain of tomorrow:

Making "No Decision-Decisions"

As human beings, our instinct is to avoid mistakes and failure, but making the wrong decision can often be better than not making any decision at all. Bad decisions can help accomplish more when they cause you to course correct. If something is done — a

decision is made — that action propels you forward. If that decision is wrong, then you fail fast, learn, correct, and move forward.

For organizations today, many "no decision-decisions" are the result of having all of the available data and not knowing where to begin. To overcome this sense of analysis paralysis, manufacturers need to have the right tools that provide the right data needed at the right time. For example, supply chain planning tools leverage real-time insights across the business, coupled with inventory visibility help leaders make informed decisions with confidence. Having the right data on hand helps any decision-making that needs to be made.

For manufacturing — an industry that can be very complex — another key to the decision-making process is to identify a decision-maker at the team level. That way, there is no confusion when it comes to who is responsible for making the final call. In order to reshape the modern supply chain, decisions must be made versus waiting for a challenging situation to arise and you're caught flat-footed. Making a decision — whether it's implementing a new technology or making a strategic pivot — is the first step. Diversifying the supply chain not only helps to decrease backorders but also ensures you will meet demand in case of a supply shortage.

SUPPORTING SINGLE-SOURCE DEPENDENCY

When supply chains are disrupted, those who single source, in particular, suffer the most. You are left vulnerable when you depend on a single supplier somewhere deep in your network for a crucial component or material. If that supplier produces the item in only one plant or one country, your disruption risks are even higher.

For example, in 1998, supply problems at Ford resulted in the three-day shutdown of the Fiesta and Puma manufacturing facilities in Cologne and Dagenham, Germany. The source of the supply problem was a computer glitch at Ford's provider of door and trunk latches. While temporary, those three days cost Ford £70M — approximately \$95M — in labor costs and the production of about 7000 vehicles. Fast forward to March 2011. Japan — considered by some the epicenter of high-tech manufacturing — was hit by a record-breaking earthquake and tsunami disaster, prompting manufacturers to scramble to replace suppliers, resulting in production delays, product shortages, and higher prices. And in 2020, as demand for PPE (personal protective equipment) grew the US found itself in an insecure sourcing situation, relying heavily on a limited number of foreign sources — countries also fighting COVID with healthcare supplies



drying up before they could be shipped out. These are just a handful of examples on how single-source dependency has been an industry-wide problem – even before the pandemic hit – but the consequences remain costly. The good news is that many organizations are becoming more aware of this problem and want to make changes. A McKinsey survey shows that 93% of supply chain leaders are looking to improve resilience by dual sourcing (53%), increasing inventory of critical items (47%), nearshoring and increasing their supply base (40%), and regionalizing supply chains (38%). More recently, according to a March 2020 Thomas Industrial survey, 64% of companies across the manufacturing and industrial sectors “are likely to bring manufacturing production and sourcing back to North America,” to avoid difficulties in the future.

When supply chain diversification is embraced the benefits are substantial. For example, supply chain diversification enables flexibility, which allows you to respond quickly to changing market trends and consumer demands – critical for any industry today that is navigating uncertain market conditions and evolving consumer behavior. Furthermore, it helps provide quality customer service. Diversifying the supply chain not only helps to decrease backorders, but also ensures you will meet demand in case of

supply shortage. Implementing or expanding supplier diversity will require investment from an organization, but the potential benefits – better competitive positioning and improved brand reputation, etc. – outweigh potential risks including potential plant shut-downs due to lack of parts and order delays. This leads to the final piece of advice.

WEIGHING COST OVER REWARD

Innovation and technology investments have the potential to upend every aspect of the supply chain but the cost – or perceived cost – of implementation can sometimes be a barrier for some manufacturers. Implementing technology should be seen as a strategic investment that can mitigate risk versus a purely depreciating, necessary evil capital expense. Many choose to put off expenditures like a new server or new computers, hanging on to aging hardware and software for far too long. What they don’t realize is that this is actually costing them more – in terms of security risks, lack of customer confidence, lower productivity, and increased maintenance costs required to keep old devices running past their expiration date. A survey found that U.S. businesses lose up to \$1.8 billion each year in wasted productivity due to obsolete technology. As devices age, they run

more slowly, crash more often, and require more maintenance, resulting in additional downtime.

Some examples of technology investments that would enhance supply chain processes include:

- **Blockchain:** *This technology brings improved visibility and transparency to supply chain processes.*
- **IIoT:** *Connected devices and sensors can enable manufacturers to communicate information and deliver insights that will upend traditional supply chain practices.*
- **Artificial Intelligence/Machine Learning:** *Advanced analytics can help drive automation and deliver insights that promote efficiencies – saving time and money.*

The supply chains of the future will need to be characterized by both resilience and responsibility and in order to do so, changes will need to be made. As previously mentioned, the first step is actually making a decision. Manufacturers need to identify the solutions that improve supply chain processes. From tools that help forecast and plan in real-time to finding better ways to adjust for any number of global variables that may impact suppliers, it’s time to adopt a new vision suitable to the realities of the new era. This article originally appeared

SIMULATIONS:

Value-Add and a Step Toward Digital Twins

By Benjamin Moses, Director of Technology, AMT

The quality and fidelity of simulation have evolved so dramatically that many manufacturers don't even know what is possible to accomplish using simulation.

— Andre Demers, Presagis

Digital simulations have been around for a long time, mostly dominated by design engineers predicting the functionality of the end product. Over the years, processing power and storage have increased to allow more variables, increasing the technology's capability and enabling more access for manufacturing processes to be simulated. These simulations are beneficial and can increase confidence in designing a process, identify failure points, and increase the bottom line. As the supporting technologies continue to develop, this value-add process will continue to grow.

THE CORE OF SIMULATION

At its core, a simulation is a physics-based digital dataset of a physical object that can be a single part or multipiece assembly. This deviates from a CAD model through the interaction of physics-based elements that change the form or assembly of the object. Such elements can be temperature, gravity, friction, electricity, motion, and time. Design engineers have long used finite element analysis and motion simulations to predict the functionality and survivability of an object in field use. Manufacturing processes are very large and complex models.

Computing performance has grown to where it is feasible to simulate a local 3D-printing process or an entire manufacturing line. Product Marketing Manager Andre Demers, Presagis, discusses the changes in perceptions of simulations in manufacturing: "What many of these manufacturers are unaware of is how far the technology has come in recent years. The

quality and fidelity of simulation have evolved so dramatically that many manufacturers don't even know what is possible to accomplish using simulation. Virtual tests can now accomplish as much as the real ones, but do them faster, more repeatedly, overnight, without safety constraints, and more robustly. Simulation can accomplish everything that real testing can and at a reasonable cost."

SIMULATION BENEFITS AND VALUE

The value of simulations can be seen in their direct effect on the bottom line. In an interview with AMT, Christopher Spadaccini, division leader for the materials engineering division at Lawrence Livermore National Laboratory (LLNL), discusses the capability of simulations opening areas to examination that can't be seen anywhere else: "Modeling and simulation allow us to explore phenomena at multiple lengths and time scales that you couldn't explore in any other fashion — saving time and money later in the process."

3D printing requires a significant amount of development, often through physical prototyping. Turning to digital prototyping through simulations, on the other hand, will reduce the lead time for the finished part and reduce the overall development cost. This can be extended to traditional manufacturing processes. A subtractively manufactured part may have many different operations or machines involved to produce the final form; digitally simulating the entire process will allow the engineer to design the most efficient process to achieve the business metrics.

NEEDS FROM SIMULATION

As the value of simulation grows, so does the need for increased capability, speed, and efficiencies. Storage, in both the volatile and long term, is the first technology to see this impact. The complexity in size and degrees of freedom continue to drive for a larger model that requires more RAM and long-term storage. In the manufacturing environment, this becomes even more critical, as systems and processes are continually changing.

As the manufacturing processes continually change, the models will constantly be retrieved, rerun, and stored again. While it is common to consider these assets at the local level, cloud computing and storage have grown in capability and ease of use, which has become popular, as the systems can scale to meet

the size or budget needs of a given project. Carlos Gonzalez outlines the collaboration benefits of cloud computing in his Machine Design article, “The Impact of Simulation and the Future of Manufacturing”: “Engineers can now build simulation apps with the help of cloud computing and storage. Instead of shifting their focus from current projects, engineers could let their colleagues run an app to perform an analysis on their own, and then suggest a design change based on the app results.”

Artificial intelligence will become more important as simulations become more ubiquitous, according to Rob Enderle from Machine Design: “The fascinating thing about simulations is they can often model changes and deliver results in real-time. More importantly, as AI capabilities advance, simulation systems can learn from past use cases to reduce the time to set them up and increase their predictive accuracy.”

Simulating processes should become the norm in manufacturing. The key to its expansion throughout the industry will be connecting and quantifying the reduction in lead time to the value of the first part correct. Refining the simulation with real-world factors will incrementally step the technology toward digital twins for maintaining and sustaining processes. David Greenfield from Automation World noted: “One of the more practical applications of the digital twin for manufacturers is in virtual commissioning. In this process, engineers have an exact, virtual model of a machine or system – built from that machine or system’s own data – on which they can test and verify specific functions for real-world commissioning purposes.”



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LONG COVID-19 A DISABILITY?

AN ADA REFRESHER FOR EMPLOYERS

By Stephen Maule, Partner, McMahon Berger

Hope that the COVID-19 pandemic would disappear quickly with the introduction of a vaccine in early 2021 has faded. Not only has there been some reluctance to receive the vaccine, but the rise of the “Delta variant” has continued to cause a steady increase in the number of people who have contracted the highly contagious disease. Further complicating matters, some individuals who previously tested positive for COVID-19 have complained of lingering long-term effects on their health. As a result, the possibility of the illness constituting a disability under the Americans With Disabilities Act (ADA) will become more of an issue for employers. This possibility presents an opportunity to review an employer’s obligations under the ADA when responding to an employee’s request to accommodate a disability.

Referred to as “long COVID-19,” the Center for Disease Control and Prevention (CDC) has identified several common symptoms that often worsen after physical or mental activity such as: tiredness or fatigue; difficulty thinking or concentrating (sometimes called “brain fog”); shortness of breath or difficulty breathing; headaches; dizziness on standing; fast-beating or pounding heart (known as heart palpitations); chest pain; cough; joint or muscle pain; depression or anxiety; fever; and loss of taste or smell.

In July 2021, the US Department of Health and Human Services (HHS) and the US Department of Justice Civil Rights Division (DOJ) issued joint guidance explaining that long COVID-19 could be a disability under the ADA, the Rehabilitation Act of 1973, and the Patient Protection and Affordable Care Act.

Not surprisingly, the Equal Employment Opportunity Commission (EEOC) has indicated it agrees with

the conclusion that long COVID-19 may constitute a disability. In fact, the EEOC recently filed a lawsuit against an employer alleging it failed to accommodate an employee’s request to work from home because her heart condition placed her at a higher risk of serious harm were she to contract COVID-19. Given these conclusions, employers should familiarize themselves with their obligations under the ADA, including participation in the interactive process when an employee requests a reasonable accommodation for their medical condition.

As most employers understand, the ADA provides that a physical or mental impairment can be a disability under the ADA if it substantially limits one or more major life activities. In addition, a person with a record of such impairment or who is regarded as having such an impairment may qualify as having a disability. As with any impairment, employers must conduct an individualized assessment of each employee’s situation to determine whether their particular impairment – such as long COVID-19 – substantially limits a major life activity.

A major life activity can include a wide range of activities, such as caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, sitting, reaching, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, writing, communicating, interacting with others, and working. The term also includes the operation of a major bodily function, such as the functions of the immune system, cardiovascular system, neurological system, circulatory system, or the operation of an organ. In addition, in keeping with the ADA’s intent to cover as many conditions as possible,

the term “substantially limits” is typically construed broadly. Thus, an impairment does not need to be severe, permanent, or long-term.

Applying these interpretations to long COVID-19, the joint guidance issued by the DOJ and HHS provides examples of what may constitute being substantially limited in a major life activity because of having long COVID-19, such as:

- *Lung damage that causes shortness of breath, fatigue, and related effects*
- *Intestinal pain, vomiting, and nausea that have lingered for months*
- *Memory lapses and “brain fog”*

Because an employee with long COVID-19 might qualify as an individual with a disability under the ADA, employers have an obligation to engage in an interactive discussion with the employee to determine how best to accommodate the condition. Participating in this required exchange will assist in determining whether the employee has a disability and whether any reasonable accommodations can be provided.

Employers are cautioned not to dismiss an employee’s claim that they have long COVID and need an accommodation, just as they should not dismiss any other claim by an employee that they may have a disability. Failure to consider whether an employee is disabled and needs workplace accommodations could expose the employer to liability for disability discrimination and failure to accommodate. Thus, it is important to be prepared to engage in the interactive process with employees who claim they need workplace accommodations for long COVID-19 related symptoms and limitations.



NATIONAL ASSOCIATE MEMBERS TEAM UP TO BENEFIT NRL



BIG KAISER and Blaser Swissslube announced 2021 year-end specials to benefit the National Robotics League

BIG KAISER offers best-in-class cutting tools, tool holders, workholding and applications support. From Nov. 1 to Dec. 30, 2021, the company will donate 2 percent of every order from an NTMA member company directly to the NRL program. Popular products include face mill holders, end mill holders, collet chucks, angle heads and tapping adaptors. Simply place your order through your local BIG KAISER distributor and use the promo code **NRL 2021** so that NTMA benefits from every dollar you invest. Find the product catalog and distributor locator at www.bigkaiser.com.

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Blaser Swissslube is a family-owned company that develops high-quality cutting and grinding fluids that deliver productivity, economic efficiency and enhanced machining quality in all manufacturing industries. From Nov. 1 to Dec. 30, 2021, Blaser will donate 1 percent of orders from current NTMA customers to the NRL, plus 3 percent of any order from an NTMA member placing their first order for Blaser metalworking fluids. Reference the promotion code **NRL21** at the time of the order to maximize the contribution to the organization. Visit www.blaser.com to learn more, contact Blaser or find a local distributor.

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Your Pipeline Is at Risk of Running Dry

By Rob Felber, President, Felber PR & Marketing

YOUR CURRENT SITUATION:

- **Supply chain distributions**
- **Labor shortages**
- **Production backlogs with more work than you can handle**

We talk to manufacturers, a lot. Our day-to-day conversations are starting to sound the same. Sales are great. Yes, you're disappointing some customers with delays or downright not accepting more work and you're simply not worried about sales right now.

Well, you should be, and here is why:

Your pipeline is at risk. If you stop filling it now with interested prospects, ignore your existing customers, you will watch your competitors pounce like a lioness in the wild! In six short months, you may very well run dry of prospects. Starting the process of prospecting and relationship building will be even tougher as your customers are actively building supply chain redundancy right now. Heard enough? Book 15 minutes today and we will see if we can help.

When times are tough, companies traditionally (and against our advice) tend to pull back on marketing. Remember 2008? Who won? Those companies that expanded their reach, sharpened their saw and

maintained open communication won. Here's what we wrote in 2009: Advertising During a Recession Nets Higher Sales Growth and again in 2019: Diversify Your Manufacturing Business to Rock the Next Recession.

Why pay attention to your pipeline when it is full?

You never know when the next anchor (e.g., Supply chain or COVID) will rip a huge gash in your pipeline. Supply chains will normalize, and labor will too.

Who will you sell to if your pipeline is dry from neglect? Can you withstand another gut punch like this?

How can you avoid a bone-dry pipeline?

Here are four inbound marketing tactics you can use now.

Lead generation. Sharpen your saw and develop new content while you have time. Engage the media to tell your story and have an effective CRM to capture, nurture, and manage new leads.

Customer acquisition. As leads move through the pipeline, use email campaigns, automated tasks, and sales sequences to schedule more discovery calls. Use this time to expand organizational charts and

deepen relationships. You have the time now, right? **Client engagement.** Stay relevant during repeated long sales cycles. Make your website the go-to industry source; not just once a year but every week. Show your expertise and become the expert in your market.

Competitive advantage. Per HubSpot research, the average company has 40 competitors. Show prospects and customers alike why your manufacturing company excels, especially in tough environments. Expert articles, infographics, and case studies will put you on the top of the mountain.

Does any of this sound like you? If so, grab 15 minutes with me on the phone and we will see if we can help. Yes, I want to talk about avoiding a dry pipeline. Or contact RobFelber@FelberPR.com (330) 963-3664.

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Humble Leadership

By Michael Watkins, MBA/JD, EBITDA Growth Systems

EXECUTION IS THE MOST
IMPORTANT OF ALL
LEADERSHIP TRAITS.



About 15 years ago I heard a great definition for leadership that went something like this: “A leader is someone that articulates a vision of the future that is so compelling that others follow despite their current circumstances.” This made me think about Martin Luther King, Jr. and his articulation of a vision that “... one day right there in Alabama little black boys and black girls will be able to join hands with little white boys and white girls as sisters and brothers.” MLK’s vision was so compelling that thousands of Americans gave their lives in the pursuit of it despite their wretched circumstances.

The owners of many NTMA member companies are leading their enterprises with the same vigor and enthusiasm that the definition implies, but most are not experiencing the impact that they are seeking. When we are engaged to help figure out why there is a disconnect, the most frequent causes may be attributed to a lack of execution and a lack of humility. The reasons are simple.

Execution is the most important of all leadership traits.

According to a well-regarded Harvard Business Review (HBR) article, “a brilliant strategy, blockbuster product, or breakthrough technology can put a company on the competitive map, but only solid execution can keep it there.” A company simply must have the ability to deliver on its intent. Unfortunately, the majority of companies aren’t very good at it, by their own admission. The authors of the HBR article invited many thousands of employees (about 25% of whom came from executive ranks) to complete an online assessment of their organizations’ capabilities, a process that generated a database of 125,000 profiles representing more than 1,000 companies, government agencies, and not-for-profits

in over 50 countries. Employees at three out of every five companies rated their organization weak at execution – that is, when asked if they agreed with the statement “Important strategic and operational decisions are quickly translated into action,” the majority answered no.

Humility: a modest or low view of one’s own importance.

Execution is the result of thousands of decisions made every day by employees acting according to the information they have and their own self-interest. Successful execution requires humility amongst the leadership. This makes sense because the opposite of humility is pridefulness. Employees are reticent to take the risk and act on available information when prideful leadership accepts all of the credit for success and assigns blame for failures.

Imagine you articulating a vision of the future to your employees that is so compelling that they follow you despite their current circumstances of labor shortages; supply chain issues; demanding clients; non-responsive outside processors, etc. Now also imagine that you have learned to be humble and to truly value the contributions of everyone on your team. It has been our experience over and over again that in this new environment your company will begin to become “execution ninjas” capable of overcoming virtually any obstacle in their path. Best of all, increased customer satisfaction and profits typically follow closely behind.

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The Latest Trends and Investment Insights

By: Anna Rathbun, Chief Investment Officer, CBIZ

The world swiveled its attention from inflation concerns to a new COVID-19 variant called “omicron” and the markets exhibited the classic “sell first, think later” routine to end the month.

HIGHLIGHTS

- Equity markets moved meaningfully upon the discovery of the “omicron” variant and resulting monthly returns were disappointing, with most major indices in the negative territory.
- Domestic large cap companies have been solidly beating expectations, however as we come off of a peak in earnings growth, we are seeing some negative guidance ahead for Q4.

- The markets overseas fell for the month, with the strengthening US dollar as an additional headwind.
- Looking ahead, omicron is expected to have directional influence on the beta of both developed and emerging market equities.
- This month in the fixed income markets, the US Treasury yield curve flattened as the shorter end rose in anticipation of a more hawkish Fed and the longer end fell.
- Due to the risk-off sentiment, however, corporate spreads widened to the detriment of credit



instruments, and the US high-yield market reflecting these losses.

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A large, complex aerospace component is shown in a cutaway view, revealing its internal structure. The component is made of a highly reflective, metallic material, likely Ti6Al-4V. It features a central cylindrical section with a transparent, spherical cap. The top and bottom sections are highly complex, with multiple curved surfaces and internal channels. The component is set against a dark background with a faint, glowing yellow light source. In the upper left, a small white commercial airplane is flying in the sky. The overall aesthetic is high-tech and industrial.

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The Power of an LED Retrofit

If there was a way that you could get new, bright, clean-looking LED's for no money out of your pocket that is entirely paid for through the electric savings, reduction in maintenance, rebates from the utility companies, and federal tax incentives, would you do it? If you're nodding your head yes, then you should be considering an LED retrofit in 2022. Ideal for parking garages, parking lots, warehouses, communities, or any of your buildings and facilities that run lights for an extended period of time, LED lighting retrofits are a benefit to the environment of course, but they also pack significant savings on your energy, less maintenance, and improved safety.

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LEDs can yield savings of up to 78% in electrical lighting costs. In fact, it's one of the most cost-effective energy efficiency projects for your facility to tackle!

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LED lighting provides better, cleaner lighting at a fraction of the energy cost of traditional lighting. LEDs are significantly more efficient than their older counterparts, providing better light with less than half as much power consumption as standard high-pressure sodium (HPS) or Metal Halide (MH) lights. Improved Safety and Visibility

LED lighting is bright and crisp, which not only improves the lighting environment of the interior of your buildings, but can also improve the perimeter lighting, parking lots, streetlights, lighting in parks,

and other exterior light fixtures in your borough, resulting in increased safety for pedestrians and drivers. In addition to increased safety, there have been studies that indicate that better-quality LED lighting can increase efficiency and productivity as well as improve employee morale.

FEWER FIXTURES & LOWER MAINTENANCE COSTS

LEDs are guaranteed for at least five years, eliminating on-going maintenance costs. The result? You're able to reduce costs with minimal operational disruption, and in many cases, no upfront capital! Moreover, because LEDs are brighter, you'll likely need fewer fixtures than the conventional lights you're replacing. In parking lots, LEDs are designed to distribute light more evenly, so in a parking lot, for example, fixtures can be spaced out, requiring fewer fixtures overall.

LONGEVITY

LED's can last upward of 50,000 hours, as compared to fluorescents and CFL's, which last anywhere between 15,000 and 20,000 hours, or incandescents, which cap out around 8,000 hours. Less changeover means even more savings for your borough.

ECOLOGICALLY FRIENDLY

If you're aiming to take steps towards more environmentally friendly measures in 2022, an LED retrofit is a great place to start. LEDs are free of toxic chemicals and are 100% recyclable. What's more, the reduced electricity usage that results means a reduction in fossil fuel use as well.

INCENTIVES

While the energy savings are attractive in their own right, incentives sweeten that deal even further. Utility Rebate Programs can offer large payments towards the project and Federal Tax Incentives can offer substantial tax incentives (EPAct 189-D). On-bill funding is perhaps the most compelling incentive, with \$0 capital required upfront. With on-bill funding, you'll essentially pay for the project over time with the savings you've incurred.

CAPTURE THE POTENTIAL

Organizations spend a significant portion of their energy budgets on lighting. By opting for a comprehensive LED retrofit, your facility could save energy, reduce utility costs, and improve upon current infrastructure. These sustainable solutions are not only cost-effective but position you as a leader for a more sustainable future.

A great place to start is by taking advantage of the NTMA's member benefits program with APPI Energy. APPI Energy's LED retrofit program provides a turnkey solution that sources products from reliable suppliers, manages the entire scope of the project, and secures rebates on your behalf.

To learn more about how they can assist you, contact your dedicated energy consultant, Noel Temple, at NTemple@appienergy.com, or give us a call at (667) 330.1159.



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Source: Grainger Consulting Services

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Key Advocacy Successes in 2021

NTMA has achieved many federal lobbying successes in 2021 through its One Voice advocacy team in Washington, D.C. This is just a partial list of accomplishments:

COVID-19

- Lobbied to increase EIDL loan limits to \$2 million
- Succeeded in eliminating PPP loan “necessity questionnaire” for borrowers
- Worked to extend PPP loans application deadline
- Successfully extended Employee Retention Tax Credit
- Partnering with business groups on vaccine mandate

Workforce

- Passed National Apprenticeship Act in U.S. House
- Filed formal comments on barriers to Work Based Learning opportunities
- \$5 billion for industry partnership grants proposed
- Lobbying to pass College Transparency Act
- Secured additional \$6 billion for registered apprenticeship expansion
- Included in appropriations bill \$50 million Perkins Basic State Grant increase
- \$386 billion secured for Veterans Affairs rapid retraining program

Regulations

- Lobbying against PRO Act union language
- Working with OSHA on Indoor Heat illness prevention rule
- Filed comments opposing new EPA’s Benefit Cost Rule

Trade

- Convinced Biden administration to lift steel tariffs on EU
- Aluminum tariffs on EU removed
- Prevented tariffs on EU copper-based alloys
- Helped introduce U.S. Senate steel tariff reform bill
- Tariffs on imported Chinese tools, dies remain
- Secured Trade Adjustment Assistance for Firms support
- Lobbying to pass supply chain competitiveness bills

Taxes

- Protected Section 179 Equipment Expensing
- Blocked C-Corporation tax increases
- Stopped tax hikes on small/medium passthroughs
- Lobbying for a four-year extension of R&D Tax Credit
- Prevented elimination of step-up basis for capital gains
- Working to preserve current estate tax rates



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- Opposite President Letter SOLD	1	\$9,000.00	\$2,190.00	\$750.00
All Other Pages				
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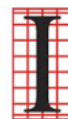
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