

INSIGHTful DISCUSSIONS

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MODERN MANUFACTURING INNOVATION, ISSUES AND IMPACT



PETE PETERSON
Founder & President,
Manufacturing Methods



MICHAEL CAMPBELL
CEO & President,
Leather Italia USA



RYAN LEGG
Founder & CEO,
MegaCorp Logistics



JERRY COLEMAN
Director,
CFCC Small Business Center
Former President & COO,
Porta-Nails, Inc.



Manufacturing has remained a strong and resilient industry, even in the midst of economic downturn in recent past. Still, like any industry, manufacturing faces challenges, including keeping pace with technological trends and finding and retaining skilled workers. We asked four local experts to discuss manufacturing's staying power and impact on the economy, as well as recent advances and obstacles within the field.

What is the biggest benefit of being in this area to manufacturing or distribution firms?

PETE PETERSON: Being in North Carolina, to begin with, is a good start. North Carolina has a low unemployment rate and ranks eleventh nationally in economic health and twelfth for innovation potential. The state has good support organizations

and programs, like NC Manufacturing Extension Partnership and Manufactured in NC, as well as others.

We are near a major port that continues to add to its capacity for both import and export opportunities. Our business facility is in the Leland Industrial Park in Brunswick County, the state's fastest growing county. The bridge improvements and highways that now include the I-140 extension make our location very accessible.

This area has the ocean, beaches and great food, and we are in one of the very best places in the state to live,

work and play virtually all year round.

MICHAEL CAMPBELL: I think the biggest benefit of being in this area relevant to manufacturing and distribution has to do with logistics, as well as the port. Having access to major highway systems in our state – such as 74/76 and, certainly, Interstate 40 – proves to be a benefit in regard to transportation and the shipment of the product.

Bringing materials or even finished product in through our ports systems and having the immediate gratification of receiving containers due to the

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proximity of the port is an extreme benefit, coupled by the fact that you are also able to reduce your intra-transit cost and keep your value in your product base and pass that through to the end consumer.

JERRY COLEMAN: There were three primary benefits for my family's manufacturing business. Porta-Nails, Inc. – a consumer products manufacturer of tools and fasteners for hardwood flooring installation – was an established local business located that we acquired in the early 1980s.

The first is this region's quality of life. For us, Wilmington is home, with deeply rooted connections and relationships throughout the community.

The second benefit was access to the port. Having access to the Port of Wilmington was a real asset for our business. We were able to leverage the local freight forwarding services, convenience and lower cost of shipping to our international markets. This proved to be a real advantage for our business.

And the third is the close proximity of higher education institutions, which included customizable vocational and/or technical training. For manufacturers like ours, it is essential that training resources are readily available to support a well-trained workforce.

We collaborated with Cape Fear Community College (CFCC), which supported our company growth with excellent technical and soft skills training in the following areas: safety compliance (OSHA and basic first aid training); quality assurance (ISO 9001 training); process improvement training (Lean and Six Sigma Green Belt training); technical (Solid Works, CNC Machining Operator and Microsoft Office Suite training); and leadership and professional development training.

We also collaborated with UNCW's SBTDC [Small Business and Technology Development Center] and Cameron School of Business, utilizing their Learning Alliance Program. UNCW professional MBA students integrated within our leadership team to develop a comprehensive international marketing plan, which became our roadmap for expanding products into Europe.

We leveraged both CFCC and UNCW programs regularly to ensure our team was well-prepared to take on any challenge and support our company growth. Both resources were invaluable to our growth-planning needs, benefitting us greatly during our 29 years in operation.

RYAN LEGG: The biggest benefit of being in this area to manufacturing firms is the location on the Eastern seaboard. The port in town, space to grow, and the mild weather make the Wilmington area a fantastic choice for manufacturing firms. It also helps to have a Top 40 logistics company in town.

What is the biggest obstacle to growing our manufacturing and distribution base?

COLEMAN: Given the rapid and ever-expanding advances in technology – i.e. data analytics, artificial intelligence, robotics, 3D modeling and printing and the Internet of Things – finding employees with the requisite technical skills is a challenge.

Our community leaders, business leaders and educators need to collaborate to focus efforts on providing

educational programs that keep pace with technology advances and meet our region's business and industry needs.

From my perspective at CFCC's Small Business Center, educators need to know what businesses need. We can take a stab at it but unless you tell us, we don't know the specifics in terms of courses. It has to be a joint effort to really be effective.

CAMPBELL: The biggest obstacle to growing really centers around the access to additional staff and team members that can lead and have an understanding of your business.

The area that we are in can, a lot of times, prove to be a melting pot area, where there are extremely talented and educated folks who are also very well-versed. So, depending on what type of business you are running or growing – and looking at the labor pool to find successful candidates to add to your company and help lead you into your forecasted stages of growth – can be a challenge if your type of business doesn't match the type of person in this area.

LEGG: For us at MegaCorp, the biggest obstacle is letting people know we're here in town and are able to arrange shipments for full and less than truckloads for our manufacturing clients.

With this being said, I think that it would be similar for manufacturing companies for getting the word out that our area is a great location for growing businesses.

PETERSON: Availability of skilled labor is the U.S.'s and N.C.'s greatest challenge to growing our manufacturing jobs locally and nationally.

Advanced machining is changing how manufacturing is done and that means a different type of

manufacturing worker. Certified and degreed machinists, welders and engineers are in very large demand and capable workforce is not always readily available.

This must change. Great jobs that pay excellent wages are available to young people if they enroll and graduate from workforce development programs.

How do small to mid-sized manufacturing and distribution firms impact the local economy?

LEGG: The local economy is positively impacted due to the creation of new jobs by small to mid-size manufacturing firms. Most companies will experience growth, which will further the positive impact in the local communities.

COLEMAN: Manufacturing firms impact the local economy in significant ways: job creation, contribution to the county tax base, and, most importantly, enhancing the region's overall quality of life.

My manufacturing small business had several direct impacts. We employed 42 people. We had operations in both New Hanover and Pender counties, and thus contributed to both tax bases. We procured supplies and services from many other local small businesses in support of our manufacturing operations, and the products we produced were used directly by local builders and flooring contractors, as well as hobbyists, in the local home construction trades.

In addition, we endowed \$50,000 in local scholarships for higher education and supported multiple local nonprofit

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organizations on an annual basis.

PETERSON: Thanks to technology and advanced machining capabilities, small to medium-sized companies can be competitive with larger firms. As entry salaries and career opportunities continue to grow, local families and economies benefit. As local companies like ours grow, so do our local suppliers and the service companies that support us continue to grow, as well.

CAMPBELL: I think they impact the local economy tremendously. They can add incredible value to household per capita income and the employment ratio in our area.

Usually, manufacturing firms that are mid-size and/or mid-market are aggressive in growth, their infrastructure and their IT areas, and they're usually adding to departments aggressively and driving their vehicle of growth a little quicker.

A lot of mid-sized companies, like our company, are independently owned and therefore, they remain very nimble and open-minded to moving aggressively, with careful forecasting and precise planning. But always looking to bring in more staff and folks to run the company offers a very positive impact to the local economy.

What is one current challenge within the supply chain?

PETERSON: For any area of the country, having a well-developed local supply chain is critically important. Otherwise, services need to come from out of the area and that leads to time delays and added costs.

CAMPBELL: The current challenge within any supply chain of a business is capital programs. Finding banks and financial institutions that understand your business, want to be a part of the business, give you credit for the business model and seek to really support your growth and follow you through your ebbs and flows is, to me, the biggest challenge that a manufacturer or distributor – or any business owner – can run across.

The challenge is, before you can enhance supply chain and plan forward and really forecast your growth in a

fiscally responsible manner, you want to make sure you have the capitalization in place. A lot of times, I have found that our area can be a great challenge in the capital aspect because there are a lot of fine banks and wonderful banking institutions in our area but their capacity to offer capital programs can be limited. So, that can often times prove to be a shift to areas like Charlotte, Atlanta or New York, where you often can lose the personal relationship and personal touch of folks who can understand your business.

COLEMAN: One challenge that I see is the current domestic and geopolitical uncertainty, particularly as it relates to policies regarding open markets and global trade.

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In my business, we not only relied on local suppliers but also multiple international trade partners for raw materials and finished product. Specifically, we had multiple key suppliers in Canada and Asia.

Movement toward policies which limit trade (increase tariffs) in our global economic environment create uncertainty and add cost and risk, potentially disrupting supply channels that manufacturers have established and depend on.

LEGG: Within the supply chain as a whole, capacity (finding an available, reliable truck) has been an issue for our clients.

Thankfully, this is our specialty here at MegaCorp, as we have a vast network of reliable trucks. Capacity has been tight due to the driver shortage, implementation of Electronic Logging Devices (ELD) and produce season.

How has technology continued to change your industry?

CAMPBELL: Technology has continued to change our industry in terms of efficiency. Technology has enhanced mechanisms that have proven to be extraordinary successes in terms of inventory controls, tracking of shipments and timeliness of order processes and procedures. Technology allows greater tracking devices on your materials or product that could even be importing into our port from China or abroad with a very finite focus, so you are able to understand the flow of the materials and timelines, in particular.

COLEMAN: We operated in a very competitive market, so it was necessary that we leverage technology to enhance our operational effectiveness and efficiency. For us, technology and the



internet leveled the playing field, enabling us to produce more product at a lower cost, better track and manage inventory, reduce advertising expenses (website, social media and/or target marketing), improve quality and expand our customer base globally.

LEGG: The biggest change we have seen recently in our industry is the implementation of Electronic Logging Devices (ELD), which began being enforced on Dec. 19, 2017. This tracks the truck drivers' on-duty and off-duty hours and has replaced paper logs. GPS tracking has also become more accurate and available for our clients' loads.

We are always improving our transportation management software with updated reporting and data for our clients regarding their loads.

PETERSON: The new manufacturing

machines, many of them made in the U.S., keep getting faster, more capable, more efficient and smarter by way of software technology and automation. This requires that companies change how they manage their businesses and the new workers they hire. This gives today's manufacturing companies the capacity to be able to do more and grow their customer base, as well as be more competitive in world markets.

Precision manufacturing now includes the making of highly complex products in the dental and medical markets, and not just machine parts and large assemblies. New manufacturing in smart metals – like nitinol that has the capacity to retain its original manufactured state – is used in heart stents, dental brackets and the like.

What are the benefits and challenges of implementing the Internet of Things into production and non-production processes?

LEGG: The benefits include safer driving and improved tracking visibility for our clients' truckloads. The biggest challenges are getting tenured drivers on board with the technology changes.

PETERSON: The Internet of Things is the foundation for virtually all that is changing business as we have known it in the past. The Internet of Things is the environment on which innovation is changing our lives and, consequently, businesses of all forms.

The internet alone eliminates barriers of time and distance and the barriers to new markets and new customers. This allows businesses to be competitive at all levels of operations and, in the manufacturing space, competitive in world markets. American ingenuity, when coupled with computerized, robotic advanced precision manufacturing machines, lets us be the leader in each of the respective market segments that we operate.

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How can manufacturers help in bridging the skills gap?

COLEMAN: I believe manufacturers, community leaders and educators first need to work collaboratively to define the skill gaps and work jointly with our high schools, community college and university to expand educational offerings to meet these needs.

Offering apprenticeships with a job placement guarantee tied to completion of the educational program can help attract students interested in manufacturing careers.

We also need to work on changing the prevailing negative stigma of manufacturing as being dirty, blue-collar, low-paying and boring assembly line-type work and dispel the long-held belief that you must earn a bachelor's degree to secure a good-paying job. In reality, manufacturing jobs have changed dramatically because of technology innovations.

We need to change this paradigm by communicating to kids in middle and high school that modern manufacturing is a high-tech industry with jobs that pay extremely well. We need to create interest and excitement among our youth that a job in manufacturing is something to aspire to. Making things is cool!

CAMPBELL: This is something I've spoken about frequently in our industry. I think that manufacturers and distributors need to be a part of the bridge in skills gap, and I think it needs to start with networking through significant and real-time internships as frequently as possible and introducing your business model into what can ultimately prove to match and be in equilibrium with someone's skills.

Manufacturers and distributors need to work with folks outside of a classroom and outside of a short-term situation and really invest – and I mean really, really invest – in educating people on the steps and procedures in the business model to enhance the skills. And that should be key action items in any business, which would be fiscal responsibility, inventory control – especially with manufacturing and distribution – and negotiation skill sets in understanding, especially in our industry, not just the skill gap but also

the understanding gap of international business versus domestic business.

Our company, for example, is an import distribution company that provides product to the retail trade. We are dealing with China and other countries. It's crucial to help people understand and learn skills that aren't necessarily always adaptable in domestic business or taught through business school, like understanding how other cultures relate or understanding your business model.

I think that is an extraordinary bridge in working together but it needs to start with understanding what type of individual and



energy level, intelligence level – all the binding particulars – you are looking to seek for your business and then homing in on and working to educate those folks on not just your business model but also the various action items that could apply to any business.

LEGG: I think ongoing training and offering continuing education are the best ways to bridge the skills gap. Training and ongoing education are readily available for all MegaCorp employees, and we have seen great results by having these options available.

PETERSON: By recognizing that the future of manufacturing lies in the use of sophisticated advanced computerized machines, such as CNC [computerized numerical control] machines, fiber optic laser cutting machines, advanced programmable press brake machines, robotic welding machines and the like.

This requires a more skilled workforce capable of being able to maximize the potential of these machines. These skills are learned in workforce development certificate and degree programs offered in community and technical colleges.

At Manufacturing Methods, we work closely with the local community colleges by reviewing curriculum and helping define the skill sets required and offering apprenticeship programs to ensure their graduates are ready for today's modern manufacturing practices.

Today's manufacturing worker is not

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the industrial blue-collar worker from 20 years ago. Today's manufacturing companies require a different type of skilled worker in the future. Companies like ours that work with community colleges and trade schools will help bridge the skills gap by having schools train students for the things today's manufacturing companies need. Additionally, providing our workers training in today's most advanced machines allows them to maximize the potential that today's precision manufacturing promotes.

Offering high-paying positions for our employees and supporting company-paid continuing education helps our employees remain current with their skills, support their families and add to the local economy.

How important is company culture to your workplace environment?

CAMPBELL: I think this is an important question and I think it applies without question; it certainly is the key necessity for a business.

A CEO or owner has a responsibility to incorporate the culture and then pass that culture through the departments

of the business. The importance of a company culture in the workplace will always allow the highest level of ethics. It should promote the integrity and value of every individual.

I believe strongly that a positive culture built around doing things the proper way and providing that through the workplace environment allows members of your team to have a voice, to feel comfortable and to know they are encompassed by the right values. I believe part of the culture should be that business owners and leaders should always put themselves last and their team should always be very respected and be looked upon as leaders and part of the vehicle to drive forward to the next levels.

I make a pledge every day to have the best company culture – one that is fair, balanced and honest – but to also prove the culture. You can't just say it; you have to prove it through your own integrity and value. And that has to be very important to every step you take every day.

PETERSON: Company culture is the cornerstone of any company.

When we started out as a small company, we established our mission of making the best quality parts and assemblies and delivering them on time and on budget all the time. We have never departed from that mission and as we have grown; our team of skilled workers remain focused on that every day.

By providing an open and diverse work environment that encourages our employees to strive for their best efforts and work as teams supporting one another, our original mission continues to pave our growth and productivity. By providing our staff the best and most innovative equipment and machines, along with training, our employees are always ready for our growth and the sometimes-changing business and customer needs.

LEGG: Company culture is extremely important and is the main reason I founded MegaCorp. I want my employees to love where they work, which is why I go above and beyond with our office facilities, company functions and day-to-day employee perks.

Our company slogan is, "The MEGA Way: Offering the best to our clients, transportation partners and employees," and everything we do is done with

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this in mind, which begins with our employee culture.

COLEMAN: It is essential, and, for us, it was very straightforward.

Our culture was all about investing in and taking care of our people. It is that simple. Our culture was built around being family. We knew and supported our people, our family. We knew our employees and their husbands and wives. We knew their kids and grandkids. We ensured they had a family-friendly work environment that supported their needs.

We provided good wages, health care benefits, employee assistance programming, retirement benefits, continuing education opportunities, and a clean and safe work environment. We sought out their input by involving each member of the team in our strategic planning and continuous improvement initiatives. They eagerly shared their knowledge and experience in helping the business achieve its mission, including our short- and long-term objectives.

I believe that our culture of family, of having each other's back, made us better people, a better business and a better community. I became a better leader as a result! Together we established a business, which we were all proud to be a part of for 30 years.

How has an increased national focus on workplace safety impacted your industry?

LEGG: The implementation of ELD, which was created for driver safety, has had a positive and negative impact on our industry.

The positive impact is that drivers' hours are regulated, so they are required to take breaks and have 10 hours of rest per day, which reduces driver fatigue and accident frequency.

The negative impact is the fact that a lot of smaller fleets and owner operators shut down due to this mandate, contributing to the ongoing driver shortage issue.

CAMPBELL: It has allowed for much more education throughout the workplace and in business. It allows folks to understand things that may

have been previously overlooked or not at the forefront of the work embodiment of the day.

An example is the forklift safety and compliance of rules that OSHA enforces. Those really allow a good base of understanding and a rule book, if you will, on the expectations, and provide a place to go to understand what needs to happen and what has to be compliant on a business property to maintain the highest level of safety but to also make sure there is a compliance that is held and assured in a very serious manner, so that you're compliant with the rules and regulations of your insurance companies.

An increased national focus makes everyone pay a lot more attention and have access to a lot more data, so if there is an accident and you were compliant and did the right things, the insurance companies can support and flow with their processes and procedures.

PETERSON: With today's advanced machines, there are fewer hands and arms that go into manufacturing and assemblies. Robots and computers fill many of the old blue collar-type jobs. Today's advanced machines help prevent workplace accidents and injuries that lead to product slowdowns. This has substantially reduced workplace accidents and consequently improved productivity.

Having safety programs in place and maintaining safe working conditions adds to employee satisfaction, as well. Being able to have our employees broaden their capabilities by leveraging all the skills that they have mastered makes them that much more efficient and capable with new projects and assignments.

How has the recent federal tax reform affected manufacturing?

CAMPBELL: I think it has affected it in a positive way. It has allowed folks to take a look at, quite frankly, long-awaited upfitting and improvements on their property, machinery and equipment.

The larger mid-market companies have got to understand the tax reform, if you will, affixation to Section 179,

in which the qualifications are a little bit unique or perhaps different than they have been in the past and what the benefits of those types of reforms are for companies.

With the right mechanics and silos in place, I think the tax reform will certainly assist certain-sized manufacturing and distribution companies in terms of profits, potential retained earnings and the ability to hire and create more jobs, which hopefully is the ultimate goal.

But from an immediate position, I think it's going to allow companies to do some housecleaning and upfitting needs that will certainly serve their ability to process and operate within their business model more efficiently.

PETERSON: The first big benefit with the recent tax law was the reduction in the corporate tax rate, which put more immediate dollars in the company operations that can be used for employee benefits and bonuses, as well as capital investments in new equipment and facilities for operations.

Efforts by the current administration to reduce the cost of foreign materials, like stainless steel, has also had an immediate positive impact in the manufacturing world.

COLEMAN: I believe in the short-term, the new tax reform and jobs act will, overall, prove to be very beneficial to the bottom lines of manufacturers large and small.

The reduction of the tax rate from 35 percent to 21 percent for C-corporations and 40 percent to 35 percent for pass-through entities will likely facilitate the purchase of new equipment and/or technology, hiring of new employees and increased wages, as well as promote overall business expansion.

There are many other elements and changes under the new law, so it is important that each organization owner or leader review their specific circumstances with an accounting professional and fully understand how the changes will benefit or affect their organization.

LEGG: It has increased the cost of materials, which affects the overall cost of the product to the consumer.

What potential future

legislative issues are of most interest or concern to you?

PETERSON: North Carolina has made great advances in recent years with improved state corporate tax structures and through state and local county investment incentives that provide for expansion of operations and the creation of new jobs.

Helping statewide areas, where manufacturing is a key part of the local economy, with improving supply chains and business partners can help all companies grow, keep jobs local and create an attractive location for new businesses via relocation or expansion.

LEGG: The infrastructure spending bills for the highways is always of concern to our industry.

CAMPBELL: Overwhelmingly, the answer to that is going to be the tariffs that are flying around and have been posted and definitely utilized as mechanisms to either negotiate or levy words of weight, if you will, for negotiation.

But I want to reverse the question. I think you have to understand that this is very important before future legislative issues become of great interest or great concern. You have to evaluate the cause and the effect because what I believe is, a lot of the tariffs through legislative issues or rules and regulations that are out of business owners' control are also going to be full pass-throughs.

People need to understand that if those things are implemented, they may not be as individualistic as they think. If there is a tariff on "product X" and that is going to mean a price increase or adjustment in your marketing, that potentially also can have the same effect throughout your industry. So, your competition may be on the same playing field – a neutral playing field. At that point, what folks need to look out for is not necessarily the concern and impact as much as being as prepared and efficient as you can to soften those kinds of impacts that may be out of your control and make sure that you're as fluent as you can be in everything that is important in your daily workload output.