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THE TOP 50

Electronics Distributors

TOP DISTRIBUTORS

2021

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TOP DISTRIBUTORS 2021

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BRIDGET MCCREA, Contributor

Electronics Distributors Outlook for 2021

Business is brisk in the wake of the COVID-19 pandemic—but challenges persist.

Business is booming for electronics distributors as industries worldwide emerge from the COVID-19 pandemic and get back to business. And while supply chain interruptions, extended order lead times, labor shortages and lingering pandemic impacts continue to affect the way organizations do business, the electronics distributors we interviewed for this article concur on at least one thing: Business is brisk right now, and there's no sign of a slowdown in sight.

"We've had record-breaking bookings and sales in Q1, along with a sustained flow of activity that has extended into the second quarter of the year," says Frank Flynn, president at Sager Electronics. "This has put significant of demands on our teams, and they are responding very well." Going into the second quarter of the year, Flynn says he was pleased to see the momentum continuing. "First quarter was great, and we were wondering if things might begin to plateau, but for now it's just continuing to move along at a similar pace."

Digi-Key Electronics appears to be riding a similar wave in 2021. "As the guy who runs sales and marketing at Digi-Key, I'd say it's been a wonderful year so far," says Jim Ricciardelli, EVP of digital business. "The growth in our industry has been 'crazy good.'" So crazy good, in fact, that Digi-Key posted sales growth of 42% during the first quarter, compared to the same period in 2020. "So far," Ricciardelli adds, "April and May are outpacing that."

At TTI Americas, President Don Akery says the distributor is seeing "demand from all segments," including commercial air travel and oil & gas. "If you look at business compared to where it was in 2020, it's up substantially this year," says Akery. "We've been watching daily run rates month-over-month both from a booking and a shipping standpoint, and those numbers are 30% and almost 20%, respectively."

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Some Parts are Hard to Come By

Distributors may be posting impressive year-over-year sales gains right now, but most of them are also grappling with unprecedented challenges in the current marketplace. Already constrained leading up to the pandemic, for example, component availability—and particularly for anything semiconductor-related—has become a focal point for electronics manufacturers and distributors this year.

In a recent EndeavorB2B Webinar, IHS Markit's Greg Woods discussed how global lockdowns significantly impacted consumer spending habits and drove up demand for game consoles, TVs, smartphones and other consumer electronics. Wafer and die production capacity at fab plants geared up to meet that demand right at a time when the automotive industry decided to start an earlier-than-expected 2020 rebound. Orders for semiconductors outpaced die availability, Woods says, and semiconductor ordering lead times began to lengthen out starting in early-December.

The situation hasn't improved much since that point, with some lead times now extending out by seven months (or more). Digging down into the period between May 2020 and April 2021, Woods says manufacturers' lead times increased for 83% of semiconductor parts during that time.

Parts in particularly high demand and short supply during this period were oscillators, uPs/uCs/peripheral ICs, programmable logic ICs, memory ICs, transistors, diodes and consumer ICs. Between May 2020 and April 2021, for example, the average lead time for oscillators increased to 28 weeks (from seven weeks, while uPs/uCs/peripheral ICs saw their lead times extend to 30 weeks (from 11).

To distributors and other buyers trying to navigate the semiconductor shortage, IHS Markit recommends buying well in advance and carrying more inventory of critical components. Procurement should establish contracts with distributors, it adds, while conducting daily monitoring of critical component lead times.

To manage component end of life (EOL) and obsolescence during this inventory-constrained period, IHS Markit recommends selecting parts for new designs with cross references from multiple manufacturers wherever possible, and tells companies to monitor parts daily for changes to product status and any change notifications. "Understand part types with short life cycles," it adds, "and conduct regular reviews of products with longer life cycles to best understand risks."

Holding their Own Through the Turmoil

Going into 2020, it was anyone's guess as to how the year would go for Source Today's Top 50 Distributors. The U.S. economy appeared to be reaching the bitter end of a long, positive economic run, a contentious presidential election season was about to get underway and some markets were beginning to signal a potential slowdown. What we couldn't have predicted was a global, far-reaching COVID-19 pandemic that would take a deadly toll on human life while also bringing some entire industries to their knees.

The pandemic would eventually blanket the business world for the entire year, with some industries coming out winners, others recording massive losses and still others winding up somewhere in the middle. In looking at the SourceToday 2021 Top 50 Distributors list, the electronics distribution sector appears to have held its own through the darkest days of the pandemic, and then rebounded fairly quickly as world economies began their slow trek to recovery.

Combined, the top five distributors on this year's list posted revenues exceeding $56 billion in 2020, down from a combined $59 billion the prior year. The top two distributors on the list—Arrow and Avnet—both posted losses for the overall year. The next three—Future Electronics, Digi-Key and TTI—all posted gains for the year. The total revenues for the next five entrants—Allied Electronics, Mouser, Smith, Newark and Rutronik—reached nearly $8 billion in 2020, and were mostly even with the prior year. Of the 43 distributors that did report their revenues to *Source Today* for this year's chart, their total sales were in excess of $70 trillion.

(Continued on page 13)

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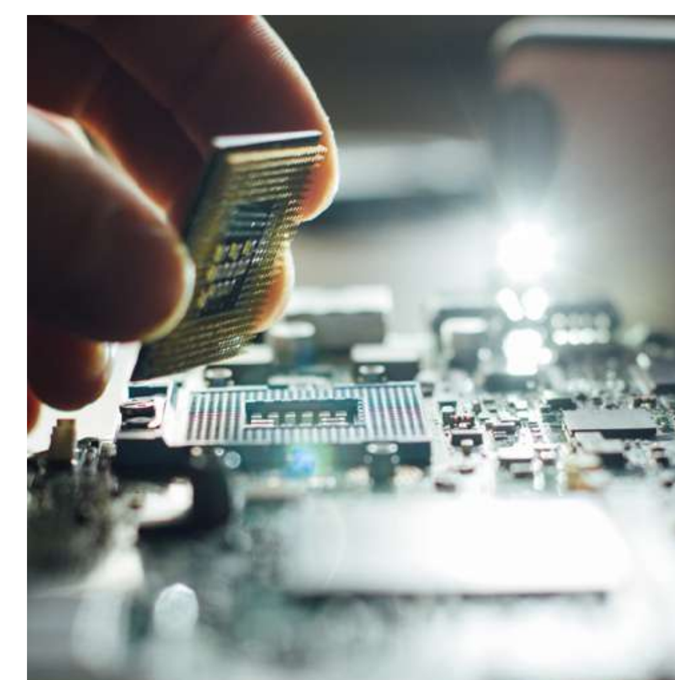

Taking the Good with the Bad

When any company gets on a growth trajectory, new challenges begin to surface almost as quickly as the emerging opportunities do. This is exactly what's happening in 2021 as electronics distributors work to balance demand with their own resources during a period where customers can't place orders or get their stuff fast enough.

"While we're trying to manage the influx of sales and booking activity, we're managing all the expedites that are coming along with it," says Flynn. "Concurrently, manufacturers are wrestling with a lot of raw material shortages and capacity issues that have really extended lead times."

To top it off, Flynn says those manufacturers are beginning to increase their prices as they deal with their own set of challenges, mostly related to rising costs of raw materials and transportation. Add the container shortage and lack of truck drivers to the mix, and it becomes somewhat of a "perfect storm" of challenges for distributors and their suppliers to contend with.

As they continue to navigate these complexities, distributors are also exploring new market opportunities, moving into new market segments and ramping up their existing offerings. Sager, for example, is finding good success in the battery pack market, which it invested in several years ago.

As they look for ways to circumvent the semiconductor shortage, customers are also sourcing more subassemblies versus discrete components, according to Flynn, who predicts a strong second half of 2021 propelled by customers that realize long lead times have become the norm.

"We may see some moderation in bookings as we go into the second half, but our backlog is at an all-time high right now," says Flynn. "We expect sales to continue growing. There are some obvious headwinds out there right now, but we don't expect them to slow this overall trend. It's just too strong."

Stocking Up

Coming out of the pandemic-related lockdowns, Mouser Electronics anticipated potential supply chain challenges—and its prediction was dead-on. When those interruptions began happening, the company's strategy of investing in and maintaining a strong inventory position paid off. "Since we order months in advance of expected demand," explains Mark Burr-Lonnon, Mouser's senior VP of global service & EMEA and APAC Business, "we've done a good job trying to stay ahead of lead time extensions and product availability issues."

Now, Burr-Lonnon says the company continues to stock the "widest product selection in the industry and suggest product alternatives if needed." Even with that approach, the distributor is subject to extended lead times and allocation on some products. As a result, keeping up with demand has become a key challenge. "Some sources are very limited in their component offerings," says Burr-Lonnon, who is optimistic about the remainder of the year across most markets.

"[While] the pandemic still is impacting manufacturing globally, we are seeing strong signs of growth in all regions—especially with the need for components (due to shortages) and the increase in new design and innovation," he says. "The use of electronic devices and systems is strong worldwide, and we are still shipping hundreds of thousands of components weekly."

Embracing a Digital Transformation

So far in 2021, Avnet has seen continued growth in the automotive, industrial, consumer, communication and computing segments. It's also picked up on significant growth in the industrial segment for robotics, factory automation and smart vision applications. "Many of our customers across all vertical markets need efficient power management solutions embedded in their applications," says Peggy Carrieres, Avnet's global VP of sales enablement and supplier development.

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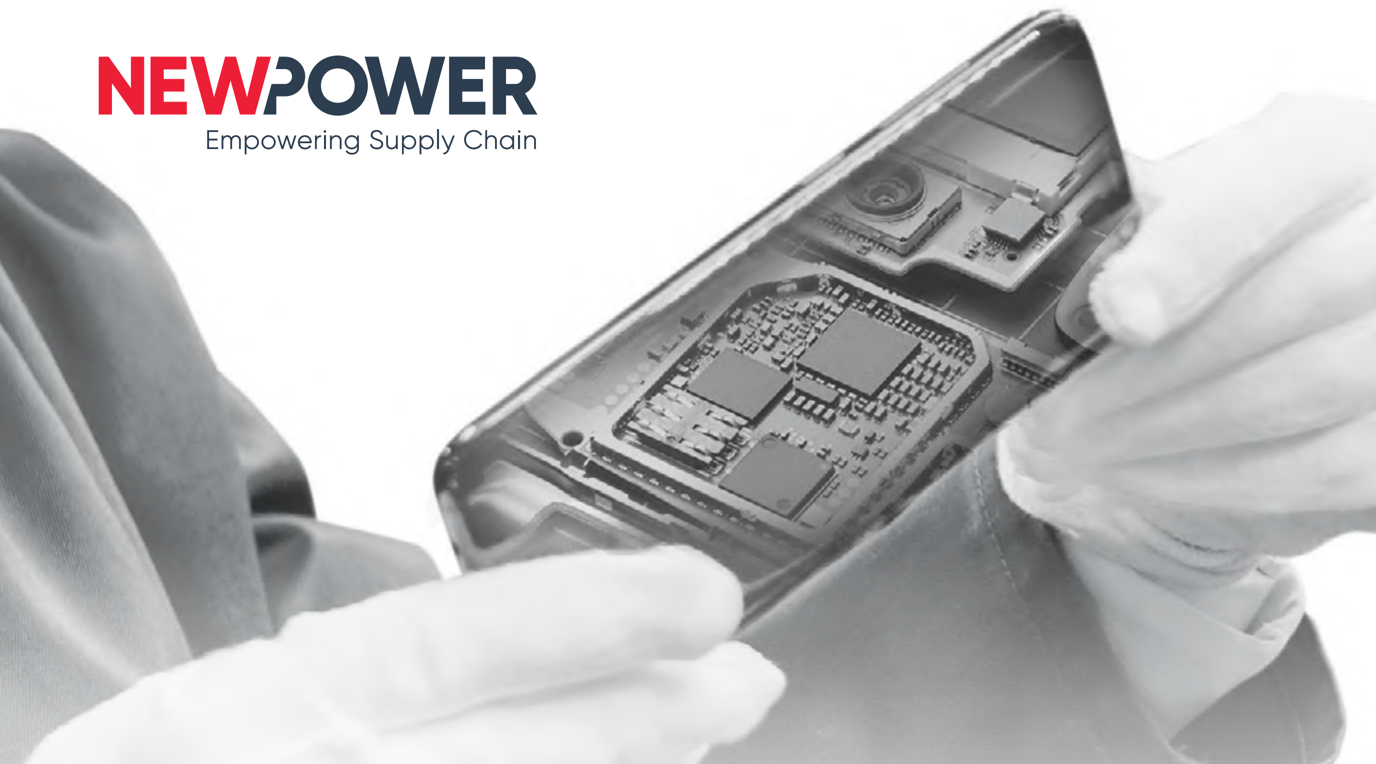

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ALL-OUT SHORTAGE MARKET

There is a global supply war going on right now, and it's a fight for allocation. Anyone asking why or how come is not in the game. The world's largest OEMs are applying tremendous pressure daily on all supply channels, and users of components need to focus on staying ahead of the competition.

The proverbial 800-pound gorillas in the market are several weeks ahead of many other organizations because of their past experiences and fortuitous preparation. Many have redirected their resources to apply pressure on all alternative avenues of supply. Their experience and knowledge base has prepared them for this type of supply disruption, and many have an approved vendor list for independent distributors to help in these situations.

At NewPower, we are prepared for this volatile market. Our proprietary trading platform EMPOWER™ provides access to billions of parts worldwide and allows our global team to deliver at unprecedented levels of speed and precision. Our experience and knowledge base prepared us for this full-on shortage – but many distributors have not been so fortunate.

Manufacturers are also in the midst of a battle. They are in a position where raw material is scarce and are faced with a finite amount of product they can produce this year. Their dilemma is how to maximize profit margins based on the limited supply. To maximize their return, manufacturers around the globe have begun to utilize alternative outlets to meet demand.

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"What's more," Carrieres continues, "as the market becomes more digital, we are seeing traditional B2B companies branch out direct to consumer, enabling companies to reach more of the mass market with different products." She sees vehicle electrification as a key disruptor in the automotive space, where Avnet is seeing growing requirements for EV battery management and increased infrastructure (i.e., level 3 charging stations) "to support the mass adoption of electric modes of transportation."

Encouraged by the continued recovery in the Americas and EMEA, both of which saw strong gains during the first quarter of the year, Carrieres says Avnet is also experiencing continued strong performance in Asia. "We recognize uncertainty around the ongoing pandemic remains," she adds, "but we have a strong foundation and remain positive on delivering on all our recent commitments."

At Allied Electronics & Automation, President Ken Bradley says he's seeing more emphasis being placed on digital technologies, automation and the Industrial Internet of Things (IIoT) within the growing industrial market. In addition, he says the number of people receiving digitally enabled medical care continues to grow, as does demand for cloud software that can be used to support remote teams.

Going forward, Bradley expects the distribution segment to continue to face challenges in the supply chain as demand in the electronics industry soars for everything from semiconductors to 5G. He also sees the bonds between distributors and their manufacturer partners becoming stronger than ever in the post-COVID business environment.

"Distributors with the right solutions and capabilities bring new customer opportunities to all manufacturers' sales and marketing channels via [a] digital presence," Bradley says. "A distributor's investment in inventory management and supply chain solutions boosts a manufacturer's competitiveness within [this] volatile and challenging supply chain environment."

Bullish on the Future

As they embrace new opportunities, tackle current challenges and future-proof their operations against new disruptions, the resilient distributors that make up the Source Today Top 50 will take the lessons learned from 2020 and apply them for years to come. They're also adopting new technologies, experimenting with new inventory management techniques, and opening their doors to a wider swath of customers that need their products and services.

All of this is being done in the name of building resilient, agile distributorships that can withstand any shock that's thrown at them. A sector that's seen more than its fair share of disruption and competition over the last few decades, distribution is well positioned to thrive in 2021 and beyond.

"The only segment we're seeing year-over-year reductions in right now is medical, and a lot of that has to with the fact that demand for ventilators and related items isn't as high as it was at this time in 2020," says Akery, who expects the rise in transportation and raw material costs to continue over the next few months.

"We're seeing new price increases almost daily," Akery says, adding that TTI works to honor its contracts and not change prices until those contracts are up, which isn't always easy to do when the cost of zinc, copper wire, cable and cold-rolled steel are rising in the double digits. "These are some of the largest price increases we've seen in a long time."

Challenges aside, and with demand expected to stay strong for the remainder of the year and into 2022, Akery is feeling pretty optimistic right about now. "We're pretty bullish on what the next year-and-a-half will bring."

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FUSIONWORLDWIDE

***Q1.* What's the market like so far in 2021 and how does it differ from 2020?**

A1. Shortages, which were originally attributed to the COVID-19 pandemic, have continued to worsen in 2021. The year opened with renewed concerns over legacy case size MLCCs used in the industrial, 5G and automotive sectors due to a fire outbreak at the Walsin production plant in China. This was followed by more natural disasters and unexpected events, including the Texas storm, the earthquake in Japan and factory fires.

Unlike last year, there are numerous market segments that are experiencing growth, such as the rollout of 5G, the rebound of the automotive sector, an increased need for datacenters and increasing reliance on AI and IoT by companies. Though rising demand should result in booming industries, numerous shortages are stunting growth and leaving manufacturers fighting over resources.

***Q2.* How are the supply chain shortages impacting your business and its customers?**

A2. The biggest issue for customers are the current widespread shortages, which is largely due to a lack of supply chain resilience. Companies who single source a component or manufacturer, fail to proactively manage their approved vendor list and don't have contingency plans are those who have suffered most from the volatile market.

In order to strengthen supply chains against unexpected events, customers need to incorporate as much flexibility as possible in the design phase, as well as build relationships with reliable and trustworthy distribution partners that can become an integral part of their supply chain. These partners would have a global footprint, the ability to provide critical information on the state of global technology markets and supply chains, a strong sourcing network to provide products to fill gaps, and superior quality systems.

Fusion Worldwide, for instance, releases a monthly market intelligence report to its customers and has even created an e-Book on how to build a resilient supply chain. The company also has the capabilities to source, secure and deliver product from around the globe through its logical facilities. It has been a very important advantage for customers in times of unprecedented disruptions. This will be especially essential as companies face allocation issues or long lead times for components and worsening shortages as a result of COVID-19, in addition to demand changes and forecasting issues.

The biggest challenge for us in the current market is staying on top of all the shortages and allocation issues. We plan on tackling this by continuing to communicate with our customers, increasing our global personnel strength and working with our partners.

***Q3.* What is the most significant business opportunity for Fusion in 2021?**

A3. The most significant business opportunity for Fusion Worldwide in the coming year is shortage fulfillment. Referring to our previous answer, exaggerated supply chain gaps as a result of interruptions are inevitable. As witnessed in 2020, supply chains will, and already are, experiencing uncertainty. This will create an increased need for secondary supply to keep operations running smoothly.

***Q4.* What other challenges are you working through and how are you overcoming them?**

A4. Logistics issues like ongoing tariffs and rising freight costs have presented challenges in the last year. Also, the surge in demand has resulted in a large increase in orders and a heightened sense of urgency. We are overcoming those challenges by doubling our warehouse space, recently opening a logistics operation in Singapore and aggressively hiring additional operational team members globally.

***Q5.* Where do the opportunities lie right now and how is your company leveraging them?**

A5. They're everywhere. We specialize in solving supply chain shocks for large OEMs and EMS companies, and many are dealing with shortages or unexpected allocation issues. The current shortage market is broad as we're seeing it impact virtually all business verticals and regions.

***Q6.* And, what do you see ahead for the rest of the year (any new trends, challenges, opportunities, etc.)?**

A6. As seen in 2020, there are many industries that have grown despite the COVID-19 pandemic. Some of them include the automotive sector and the consumer electronics market. Looking at 2021, we expect the biggest growth drivers to be the rollout of 5G, electric vehicles, AI and Internet of Things (IoT).

We predict the issues driven by the pandemic's uncertainty and the rush of these new technologies will continue. Until the pandemic ends, there will be issues with demand forecasting and production. This, in addition to the introduction of new technologies, will result in the component markets staying in flux for the next three to four quarters. While we expect some easing in certain areas, overall predictions are very bullish for the component markets, and customers should be prepared for disruptions to continue.

There will also be unseen changes and possibly further technology breakthroughs once the "new normal" is defined and people get back to living and working in a COVID-free world. The components markets are in for a wild ride as the new decade unfolds.

Pass the Chips: Robust Forecasting is Key to Solving Supply-Chain Volatility

The automotive industry is grappling with a COVID-related semiconductor shortage. Some might call it self-inflicted.

MANUEL REI, Contributor

What you'll learn:

- Why global supply chains are susceptible to geopolitical and pandemic-based disruption.
- Why traditional Sales and Operations Planning (S&OP) strategies come up short.
- How software-based modeling and forecasting tools help reduce risk.

COVID-19 has taught manufacturers a series of painful lessons, not the least of which is that forecast models are often unreliable. For example, pundits suggested early in the pandemic that the automotive sector would slow or even collapse due to government-mandated shutdowns. They were partly right, but what no one predicted was how quickly the industry would recover.

Buying levels were approaching pre-pandemic levels by late summer, thanks in large part to an increase in online automobile sales coupled with the need for many workers to use personal vehicles over public transportation. It seemed that the auto industry was on the road to recovery.

There was just one problem, though, and once again, it was something that no human could have predicted. All of the millions of people working from home, the students forced into hybrid learning, the streaming and binge-watching and online gaming—all of it led to skyrocketing sales of laptop computers, tablets, and game consoles. Semiconductor manufacturers took notice and quickly shifted chip production to consumer electronics. Unfortunately, that's right about the time when everyone realized—too late—that automobile consumption wasn't going anywhere but up.

Between that and the chipmaking industry's internal COVID challenges, the die was set. Shortages abound, and automakers are now dealing with a new slowdown as they struggle to shore up their semiconductor supply chains. Ford, Dodge, Subaru, Fiat, and others have either trimmed production schedules or, in some cases, idled entire plants while waiting for the microprocessors found in everything from engines and transmissions to heated seats and infotainment systems.

Worse, personal electronics and automobile manufacturers alike are now paying premium prices for chips, up to 20% higher in some cases. This unpleasant situation became even more dire thanks to a recent fire at Tokyo's Renesas Electronics Corp., a leading supplier to the automotive sector. The result? Chip prices are in all likelihood going to rise even higher as manufacturers invest in the capital equipment and additional tooling needed to increase production capacity.

Such volatility is nothing new, although it usually occurs at a far lower scale. The pace of change and innovation has always been high in the semiconductor industry, given its complexity, abbreviated lifecycles, diverse product mix, and extreme competition. These historical challenges have led the manufacturers of these goods to take a defensive stance and run their fabrication facilities at maximum capacity. The result? Any supply-chain hiccup or market readjustment can lead to shortages and price increases, hopefully just temporary ones.

Girding for Market Disruptions

The question then becomes: How can semiconductor manufacturers better prepare for these dynamic, sometimes fundamental market transformations? Just as importantly, how can they sidestep offending their customers and trading partners with price increases that some might say are avoidable, while maximizing their capacity to meet changing customer demands and achieve a flexible, responsive supply of chips?

Several changes are required to address each of these needs. A comprehensive, integrated business platform eliminates spreadsheets, manual processes, and islands of information from disparate software systems. This is particularly important for the chipmaking industry, which must not only deal with continuous change, but also play a pivotal role in supplying countless other manufacturers.

With that comes access to integrated analytical and simulation tools. Market predictions should be made based on real-time data rather than market trends, sales history, and even educated hunches.

Chipmakers must gain the ability to model their supply chain and production capabilities in a single planning environment, one that supports what-if scenarios and allows supply chains to be optimized based on various corporate KPIs. The resulting information also should be seamlessly tied to the production floor, where dynamic, flexible, demand planning capabilities help drive efficient manufacturing processes and reduce waste.

Lastly, chipmakers will need to embrace more integrated and collaborative digital practices. As other industries have discovered, multi-site, cloud-based collaboration with suppliers and customers provides countless opportunities for process improvement and a resilient supply chain. So does an S&OP strategy that relies on accurate, up-to-date information only possible with a robust, company-wide software platform.

The result of all these actions will be a supply chain that can better anticipate and respond to unexpected interruptions in critical resources, hopefully not caused by another pandemic.

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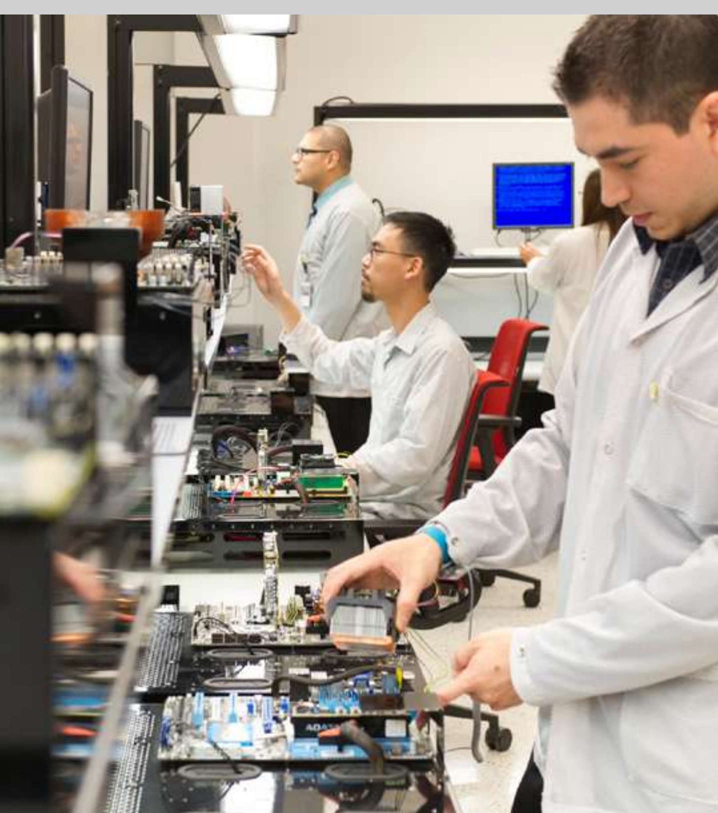

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Q&A

with Marc Barnhill

Chief Trading Officer of Smith

SMITH

What's the market like so far in 2021, and how does it differ from 2020?

While demand remained steady for much of 2020, it has now drastically increased across all sectors this year. In 2020, we saw some shortage situations, but they were mainly narrow in scope and short-lived. Since the beginning of this year, we have seen demand rising sharply, first in the automotive sector and now across virtually every industry.

How are the supply chain shortages impacting your business and its customers?

The current shortages are keeping Smith busier than ever. Not only is it our job to get customers the parts they need, but we are also keeping customers up to date with real-time market information to help them plan accordingly. Smith's global offices are now more connected than ever, too. We are in such a fast-changing market where utilizing reliable information is key to staying ahead. With 16 strategically located offices around the globe, we are constantly receiving information, positioning us as a prime partner for open-market intelligence.

What other challenges are you working through, and how are you overcoming them?

Many electronic components have extremely long lead times currently. For some parts, we are seeing 30–70-week lead times, which is about three to five times greater than the standard operating period. To work through this challenge, we're relying on our nearly four-decade-long customer and supplier relationships. Again, in this market, having real-time, vetted information is what sets companies apart. Smith utilizes the information we receive to help our customers make informed, realistic planning decisions to overcome lead-time obstacles.

Smith utilizes the information we receive to help our customers make informed, realistic planning decisions to overcome lead-time obstacles.

Where do the opportunities lie right now, and how is your company leveraging them?

There is a lot of opportunity in matching buyers and sellers right now, and that's precisely where Smith excels. Our IT infrastructure houses a multitude of data points, allowing us to see what parts customers have historically used and where there might be excess opportunities. From there, we can help take some unwanted inventory off of our customers' hands and then sell the parts to another customer who needs them to keep their supply chain active. It's a win-win situation for everyone involved, and we will continue to be a trusted resource throughout the different shortage dynamics.

Finally, what do you see ahead for the rest of the year (any new trends, challenges, opportunities, etc.)?

We do not see demand for semiconductors easing much this year. With the range of products affected by this shortage, we expect our customer base to keep growing. Open-market distributors have become critical partners to electronics manufacturers, and we see current market conditions continuing to solidify our critical role in the supply chain. More doors are being opened to us because of our nearly 40 years of experience navigating shortages. Smith looks forward to continuing to lead the development of open-market distribution.

Developing “Fitter” Global Supply Chains

New report uncovers the key differentiators between fit and fragile companies in the wake of high-impact events like the COVID-19 pandemic.

BRIDGET MCCREA, Contributor

As the vulnerabilities in the world’s supply chains continue to surface and garner attention, it’s become clear that some organizations had their collective acts together pre-COVID, and that others scrambled to readjust in 2020.

As the pandemic persists, the focus on continuous improvement in this area has yet to wane. With semiconductor chip shortages, port congestion and labor constraints continuing to impact the supply chain, these critical networks are no longer just operating “behind the scenes”; they’re now front-and-center for most organizations.

Survival of the Fittest

According to new research from Gartner, Inc., the COVID-19 pandemic revealed key differences between “fit” and “fragile” supply chain organizations in terms of how these entities deal with disruption. Whereas the most fragile supply chains focus on short-term survival, it says, the fittest supply chain organizations view disruptions as “inflection points” to improve the value that supply chain provides to the business.

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"Disruption is not a short-term situation, but a long-term trend that will most likely accelerate as we face climate change impacts, global power balance shifts and more," said Simon Bailey, senior director analyst with the Gartner Supply Chain practice, in a press release.

"In the future, disruptions will occur more frequently and supply chains must be able to deal with whatever is coming next," Bailey continued. "Some supply chain leaders have understood that already and prepared their organization accordingly."

What's the Difference?

According to Gartner, the different between fit and fragile supply chains is pretty straightforward: Fit supply chains can move ahead of the competition after dealing with high-impact events, while fragile supply chains fall behind. Here are some other key differences between the two:

For fit supply chains, Gartner says the most impactful disruptions are those that involve fundamental, structural shifts. Those shifts happen in the context in which the supply chain operates (i.e., new technologies and changing competitive dynamics).

By contrast, fragile supply chains find operationally focused disruptions (i.e., demand and supply shifts) to be most impactful. While focusing on these operational challenges, the firm explains, companies with fragile supply chains "lose sight of their long-term goals and overlook how structural shifts could help them maximize the value and thus they fall behind the fit supply chains."

In most cases, the category that the supply chain falls into—in this case, either fit or fragile—determines the actual impact of the disruption.

"Fit supply chains excel at focusing on the structural disruption and proactively translating those into competitive advantage," Bailey said in the press release. "They are able to change their organizational design to capitalize on structural shifts and create new value for their customers."

Maintaining Long-Term View and Investments

When examining the ways fit and fragile supply chains approach disruption, exactly how they treat their long-term strategies and investments is a critical factor. For example, Gartner says most fit supply chains maintain focus on the long term and preserve strategic investments during disruptive events.
On the other hand, fragile supply chains prioritize current-year performance and cut strategic investments. "During a disruption, supply chain leaders should try to avoid emergency cost cutting that put both short- and long-term effectiveness at risk," Bailey concluded. "Instead, cost optimization should be an ongoing effort in the supply chain and cost decisions must take all the operating outcomes across fulfillment, reliability, risk, and growth into consideration."

U.S. Shippers & Carriers Wrestle with a Growing Truck Driver Shortage

As production and business activity ramp up in 2021, a persistent truck driver shortage is creating a capacity crunch and driving up freight rates nationwide.

BRIDGET MCCREA, Contributor

A truck driver shortage was already in full effect pre-COVID, and it has become a growing concern for buyers that are not only concerned about delivery lead times, but are also facing higher freight rates as a result of this ongoing dearth of drivers.

With nearly 70% of all domestic freight moved across U.S. highways, the driver shortage is a critical issue right now. Without drivers in the seats of those trucks—and with autonomous trucking and drone deliveries still in the development stages—getting that freight from origin to destination has become more complex and less affordable.

Factor the global pandemic, component shortages and supply chain disruption into the equation, and the situation isn't getting any easier as we move further into 2021. The shortage is exerting cost pressure on transportation carriers in the form of higher driver wages, bonuses, recruiting costs and benefits. These increases are being passed along to companies in the form of higher transportation rates.

"The highest-demand job in the country is for truck drivers, particularly those who can handle heavy commercial vehicles and tractor-trailer rigs," *LA Times* reports, noting that nearly 760,000 such trucking positions were open in December—roughly three times the openings for registered nurses, the second-most high-demand job right now.

(Continued on page 31)

No End in Sight

According to Beroe, a provider of procurement intelligence and supplier compliance solutions, the truck driver shortage may be the "new normal" for transportation, at least for the foreseeable future. In examining the bulk tanker market, Beroe says this sector alone will require 174,000 new truckers over the next five years.

"There are approximately 63,000 truck-driving jobs in the bulk tanker market that are vacant today, and the global tanker trucks market size is predicted to need 174,000 new truckers by 2026," Beroe explains in a press release. "This kind of decline affects the rates due to the capacity shortage."

In comparison to Class 1 railroads, which employed approximately 165,000 people in 2017, the trucking industry employed more than 1.8 million drivers—10 times higher than the former. The American Trucking Association (ATA) estimates the current driver shortage of 63,000 could surge significantly in the next five years unless intervened with proper steps.

Beroe says demography is the primary cause for the shortage. "In the U.S., bulk tanker market trends show that truck drivers tend to be about seven years older than normal American labor," it explains. "As they retire, it becomes difficult to replace them because the younger workforce is always looking for less-demanding careers, particularly in other industries."

Potential Roadblocks for Drivers

Other factors creating the driver shortage right now include challenging working conditions that contribute to an overall attrition rate of over 100% for the profession. "This has resulted in an increased cost and rate for shippers," Beroe says, adding that other contributing factors include recent changes in electronic logging device (ELD) mandates and hours of services (HoS) rules, both of which dictate the number of hours a driver can spend behind the wheel.

The Federal Motor Carrier Safety Administration's Drug & Alcohol Clearinghouse online database, which provides employers and government agencies with real-time access to information about CDL driver drug and alcohol program violations, is also creating potential—albeit necessary—roadblocks both for new and existing drivers.

Put in place in January 2020, the clearinghouse is an online database that provides employers, driver licensing agencies and law enforcement officials with real-time results of the required drug and alcohol tests taken by professional drivers. "In the first six weeks of operation," NACS reports, "the clearinghouse detected and identified nearly 8,000 positive substance abuse tests of commercial drivers, including bus, limousine, municipal and construction equipment operators, as well as truckers."

Casting a Wider Net

While there is no single solution to the truck driver shortage, Beroe outlines a few good starting points in its report. For example, it says many trucking companies have started optimizing shipping routes and using technology to improve drivers' lives to ensure that they spend less time on the road.

"Companies now should also reach out to women, minorities and veterans to take up the wheel and bring down the present and expected shortage," Beroe advises. "Change in shift patterns to improve schedules that prevent unsocial hours is another course of action recommended to mitigate driver shortage issues."

With Driverless Class 8 trucks now in the production pipeline, Beroe also sees driver-assist technology for heavy tractor-trailers as a boon that will make the job less stressful, reducing the high attrition rates. "The bend on technology," it adds, "will also attract a younger crowd towards the profession."

Executive Perspectives, Microwave Components

Source Today talks with Michael Wisner, vice president – GM, Microwave Components LLC.

Current industry trends—what's happening?

The year 2020 brought out the best and worst in distribution due to the global pandemic. Perhaps relating 2020 to the five stages of acceptance with a medical diagnosis is helpful to reflect what we did with our businesses.

The first stage is denial. The business model we adopted was, "The illness we read about will never impact my business."

Denial led to anger, and distribution had to change the way we did our job. In Southern Florida, we already had a basic Hurricane Preparedness procedure; why not practice our countermeasures for the virus by pretending there was a hurricane approaching? Could we work from home? Who was responsible for ensuring business did not suffer?

The third stage is depression, and I'm sure everyone regularly wanted business to return to normal.

The fourth stage is bargaining or negotiating. Larger distributors protected their business by "buying" market share in non-traditional market segments, and OEMs who were impacted by the commercial aerospace downturn emerged as direct competitors to traditional distributor business.

The response from distribution was to protect their business at the expense of price. Essential businesses were protected because the mil/aero business continued without being impacted for larger program funding changes.

The fifth stage and final stage is acceptance. Distribution has learned to accept the new norm, and budgets have been reset based on the business level they win and markets they serve.

How's business?

Microwave Components, as a smaller distributor, was able through hard work, planning and complete employee support to overcome the challenges we faced in 2020. MWC had a successful 2020 despite the many challenges that confronted us. Heading into 2021, our focus continues to expand the business by focusing on new markets, new products and the addition of new complementary suppliers.

The variable that provided the greatest unknown was the impact of a new administration and a majority congress of the same party. As a result, we've experienced program cancellations and push-outs. Through four months of 2021 we have continued our execution of our plan, and we remain buoyant 2021 will bring stability to the markets and customers return to their work sites for face-to-face engagement.

What are the key challenges, and how are distributors addressing them?

As described in our response to the current industry trends, distribution has had to defend their business sockets, take a tougher look at margins and encourage their organizations to offset business challenges with new business. Microwave Components adopted the strategy to expand our footprint by selling additional products from our franchised lines that we had not sold previously.

Business continues to evolve and become more challenging, driven by younger engineers, de-centralized supply chain organizations and increased competition vying for fewer opportunities at the present time. Importance of business relationships have decreased and the emphasis is now placed on price, lead-time, inventory and a robust digital media presence.

These factors continue to be compounded with customers' work-at-home and hybrid environments. Expanding our footprint with existing customers became an easier strategy than trying to win new customers when those could not be visited. We have learned to accept customer response times are slowed because so many buyers are working from home and their leadership did not invest in cell phones and extra office equipment they have access to from their normal businesses. Communication is predominantly via email.

What new opportunities, markets, customer segments, etc. do you see emerging?

Microwave Components is working diligently to capture business in the usual areas—5G, space, smaller-sized products, ganged and hybrid technologies—and is promoting our value-add capabilities. What is inspiring to me is to see the innovative ways the Field Sales Team approach customers to win business.

What's the outlook for the next few months?

What 2020 has taught us is that there is a "new" normal, one that will never be quite the same as the pre-pandemic normal. The distribution segment needs to continue to evolve to embrace the market changes to ensure our viability in this new normal world. The market is in an unstable condition presently: Government program funding is being evaluated by the new administration. 5G deployment has been delayed as OEMs have worked with skeleton crews, or engineers had to work from home.

Commercial aerospace is rebounding and passenger miles are increasing, but the supply chains have been disrupted and time is needed to resume their flow while the glut of inventory is consumed before pre-pandemic business levels resume. The automotive market is limping due to available semiconductor chips that delayed more progress in the launch of electric vehicles, and overall R&D investments are deferred.

Fortunately, Microwave Components has a strong, loyal customer base because we have supported them faithfully over the years and celebrated successes with them and worked with them when times were tough. Customer satisfaction levels have remained at an all-time high. The outlook for the next few months will be difficult, but business will emerge stronger as we arrive at 2022.

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	Company	2019 Global Revenue
1.	Arrow	$28,673,363,000
2.	Avnet, Inc.	$16,340,100,000
3.	Future Electronics *	$6,000,000,000
4.	Digi-Key	$2,900,000,000
5.	TTI, Inc.	$2,890,000,000
6.	Allied Electronics, Inc.	$2,058,672,900
7.	Mouser	$2,032,000,000
8.	Smith	$1,390,000,000
9.	Newark	$1,294,000,000
10.	Rutronik	$1,230,000,000
11.	Fusion Worldwide	$1,214,000,000
12.	DAC	$962,400,000
13.	NewPower Worldwide	$456,500,000
14.	Master Electronics	$342,000,000
15.	Sager Electronics	$313,000,000
16.	A2 Global Electronics + Solutions	$258,000,000
17.	PEI-Genesis	$250,000,000
18.	bisco industries	$224,300,000
19.	Crestwood Technology Group	$205,000,000
20.	Powell Electronics	$204,000,000
21.	Chip 1 Exchange *	$197,000,000
22.	RFMW, Ltd.	$194,000,000
23.	Sourceability	$180,000,000
24.	Electro Enterprises Inc.	$168,348,644
25.	Richardson Electronics *	$155,898,000
26.	Velocity *	$122,000,000
27.	ADI/American Distributors *	$120,000,000
28.	Flame Enterprises Inc.	$91,000,000
29.	Hughes Peters	$90,000,000
30.	Classic Components	$87,000,000
31.	Steven Engineering	$84,500,000
32.	Corestaff Co., Ltd.	$83,000,000
33.	Symmetry Electronics	$65,000,000
34.	Marsh Electronics	$58,480,148
35.	Area51 Electronics	$48,248,150
36.	IBS Electronics, Inc.	$45,000,000
37.	SMD Inc.	$42,500,000
38.	All Tech Electronics, Inc.	$40,000,000
39.	Air Electro Inc.	$37,240,837
40.	Flip Electronics	$35,000,000
41.	Diverse Electronics	$32,200,000
42.	Brevan Electronics	$32,100,000
43.	March Electronics	$27,000,000
44.	Nasco Aerospace & Electronics	$25,100,000
45.	Powertech Controls Co. Inc.	$24,600,000
46.	Kensington Electronics	$20,200,000
47.	Marine Air Supply	$19,500,000
48.	Benchmark Connector Corporation	$19,000,000
49.	PUI (Projections Unlimited, Inc.)	$18,776,534
50.	Advantage Electric Supply	$15,000,000

* Publishers Estimate

Executive Perspective, Mouser Electronics

Mark Burr-Lonnon is Mouser Electronics' senior vice president of Global Service & EMEA and APAC Business.

What advice do you have for purchasing agents and customers at this time when the economy is starting to recover but there are supply chain challenges?

Never has it been more important to buy from an authorized distributor. Purchasing professionals know the benefits of doing business with Mouser, with our efficiencies, security and conveniences. We are a Top 10 global distributor and have everything for a buyer's bill of materials (BOMs). With around $850 million of inventory from over 1,100 leading brands, in stock and ready to ship, we are well-positioned to help a vast array of existing and new engineers and buyers.

Whether a customer is buying online or through one of our customer service representatives, we have the professionals and procedures in place to ensure an effective and efficient supply chain, free of counterfeit or grey market products. Some sources are very limited in their component offerings. With Mouser, customers can source their entire bill of materials from us. It's easy, one-stop buying.

How has the coronavirus affected your organization?

Like all businesses, we have adapted our operations to meet the challenges. Mouser was designated an essential infrastructure business and has remained fully operational at all 27 of our locations worldwide since the beginning of the global pandemic in 2020. The Mouser team is working diligently to provide the world's broadest selection of electronic components, in stock and available for immediate shipment.

What is your outlook for the remainder of 2021?

We are very optimistic. Whilst the pandemic still has a big effect on manufacturing globally, we are seeing strong signs of growth in all regions—especially with the need for components (due to shortages) and the increase in new design and innovation. The use of electronic devices and systems is strong worldwide, and we are still shipping hundreds of thousands of components weekly. The biggest challenge currently is keeping up with demand, as well as supply from our manufacturers, which is increasingly constrained.

How do you see the coronavirus affecting the industry as a whole?

Product delivery lead times and shortages on certain components have become an issue due to the shutdowns, and now with strong increase in demand. Our focus on new product introductions is a key driver for our business and is what sets us apart in the industry. This provides our customers—particularly design engineers—an edge by avoiding costly redesigns, speeding their time-to-market and providing a longer lifecycle.

How would you rate your company's supply chain ability to react and respond to this and other disruptive events?

The rating would be very strong. Our employees have shown tremendous resourcefulness over the last year. All Customer Service and Technical Support teams are fully available by phone, email and chat. Our team members at some locations are still working remotely.

In 2020, despite the global pandemic and economic downturn, we experienced record growth in revenue; we added over 70 new manufacturer partners and we saw an increase in our number of customers. It's a testament to the great dedication and teamwork at Mouser.

What are the key technology drivers will fuel growth ahead in 2021?

The digital revolution is accelerating, and the expansion of IoT will continue to fuel the global need across all industries for semiconductors and electronic components. We expect 5G, artificial intelligence, robotics, industrial automation and transportation to continue to be major drivers in the industry.

Mouser specializes in the newest products and we stock the widest inventory in the world, with over 1.1 million unique part numbers in our warehouse today, ready to ship. We are seeing new sensor technologies from our manufacturers, as well as the latest in power management and, of course, advancements in microprocessors. Automotive, factory and home automation also will continue to be emerging markets as more technologies are introduced to make buildings, homes and vehicles smarter and safer.

What are you doing to prepare for growth ahead?

Last year, we completed a major expansion at our 1 million square-foot global headquarters and distribution center in Texas, where we added a new customer service center and additional state-of-the-art automation.

We are proud to have the largest installation of Vertical Lift Modules (VLMs) in North America, a testament to our belief in working smarter. We have 55 VLMs in operation and are in the process of adding 47 more by summer 2021. VLMs—essentially giant vertical filing cabinets—can store up to 120,000 parts, helping our distribution teams greatly expedite orders for our 630,000 customers worldwide.

Mouser is strongly poised for the digital future with our industry-leading website, available in 63 country subdomains, 20 languages and 34 currencies. Over half of our business today comes via the internet, so we continue to expand mouser.com with search enhancements, buying tools and technical resources for buyers and engineers.

We listen to our customers and try to meet their needs, staying nimble.