ELECTRONICS
sourcing

Distributors Limit 2023 Revenue Decline to −6.4%

Top 50 Americas distributors revenue still above 2021 level and above 2020 by 36%

After two years of back-to-back unprecedented growth, the Top 50 Americas Authorized Electronic Component Distributors hit a bump in the road in 2023. Despite the challenging environment distributors encountered in 2023 they were able to limit the overall decline in Americas revenues to -6.4%. Revenues for 2023 still came in above the 2021 level and were $8.2 Billion above 2020 combined revenues. In addition, an impressive 46% of the Top 50 companies achieved positive revenue growth in 2023. The results of ECIA's monthly and quarterly *Electronic Components Sales Trends (ECST)* are registering the best results in nearly two years as optimism for growth re-emerged in early 2024. In spite of a relatively weak start to the year, there is reason to hope for a return to overall positive distributor revenue growth in 2024. It will be difficult to match the revenue leaps in 2021 and 2022 but it may be possible to return to the high water mark in revenue set in 2022. There are still troubling clouds on the economic horizon

that could hinder 2024 performance and there is always the possibility of another black swan event. However, it is worth remembering that the most common word used to describe distributors and the distribution industry in the interviews for this article last year was "Resilient." If anything, distributors have shown their strength in the face of adverse circumstances in 2023 and they appear to be prepared to move to the next performance level with the lessons they have learned.

Interviews with experienced distribution executives yield important understanding regarding major issues confronting authorized electronics components supply chain participants. As part of the survey to identify the *"Top 50 Americas Authorized Distributors,"* executives were asked to rate the level of severity they anticipate for various supply chain challenges. The results for 2024 are compared to the responses for 2023. Once again, the good news is that every category saw a reduction in the level of anticipated challenge with the exception of

Cybersecurity Threats which saw a significant jump in concern. Two new categories were added to the survey this year: Geopolitical Conflicts and Government Regulation. Geopolitical Conflicts rivaled Cybersecurity Threats in the reported level of concern. The results of the survey are shown below, and selected categories align with topics addressed in interviews with these leading industry executives.

Dale Ford – ECIA
Chief Analyst

> "An impressive 44% of the Top 50 companies achieved positive revenue growth in 2023"
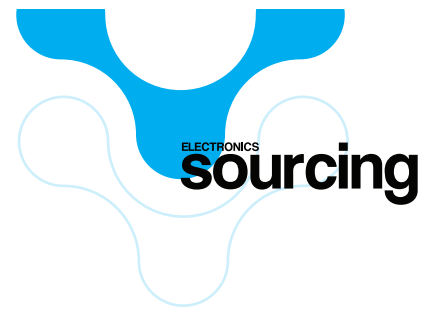
Supply Chain Executive Insights

Pandemic Upside? – Highlighting the Value of Authorized Distribution

A silver lining has emerged from all the challenges that the electronics components industry faced during the pandemic. Executives interviewed for this article pointed out the improved perspective of their customers regarding the value of authorized distribution and the change in behaviors and interactions.

Customers came to understand that "A successful supply chain leverages a trusted global partner with nimble & dynamic inventories, to support multi-regional manufacturing strategies. They see that we reduce the supply chain complexities" according to Arrow's SVP, Global Supplier Management, Aiden Mitchell. Further, he explained that "customers that were direct previously saw the benefits that we offered with Supply Chain Services which improved visibility, flexibility & convenience in managing supply/demand, inventory, order management, fulfillment & logistics across all their component requirements."

Kevin Hess, Senior VP of Marketing at Mouser Electronics, explained that: "During the pandemic, the WFH model led many people to go online for sourcing components, including engineers and procurement agents. There was a major shift in buying. As an e-commerce distributor, over 60 percent of our business comes to us via online sales. Post pandemic, we continue to see new users who prefer the convenience of online shopping and fast shipping. In 2023, a whopping 54 million unique visitors/ new users came to the Mouser website."

The president and CEO of ECIA, David Loftus emphasized the challenge of encouraging supply chain customers to remember painful lessons from mistakes of the past. "In general, I do believe that there are a lot of customers that learned a hard lesson, especially automotive and other guys that were trying to manage their inventories too lean. Too many people were trying to be direct customers when they shouldn't have been and over time it was a rude awakening for them not having the cushion of the channel. The jury is still out as to whether people have learned long lasting lessons from that. Every time we go through a really tight period, I think customers just have to learn their lesson. But each time I'm proven wrong. When business conditions improve and the normal purchasing metrics get put back in place on procurement teams and the way their bonuses are tied to minimizing inventory, excess and obsolete inventory, and to have the longest cash to cash cycle, those procurement people are motivated to manage their businesses very, very thinly.

"I believe that this last cycle was more painful, significantly more painful, than 2010. But in 2010 when the last huge shortage occurred everything snapped back after the financial crisis and the world didn't fall apart. I think there will be certain customers that have learned lessons and will much more strongly embrace the channel. I think there are a few others that still don't understand the channel well, especially in the automotive space. I do believe in general that the broad industry and a lot of the Tier 2 and Tier 3 customer base has certainly learned that their channel partners are really critical partners in being able to push and manage fluctuations in the supply chain. I strongly believe that it'll be a better managed cycle the next time around."

Loftus ends with a hopeful comment regarding automotive manufacturers and their purchasing patterns. "Automotive manufacturers are used to being king-of-the-hill in their respective supply chains. Electronics aside, when they're talking about tires and braking

Electronic Component Supply Chain Challenge Expectation
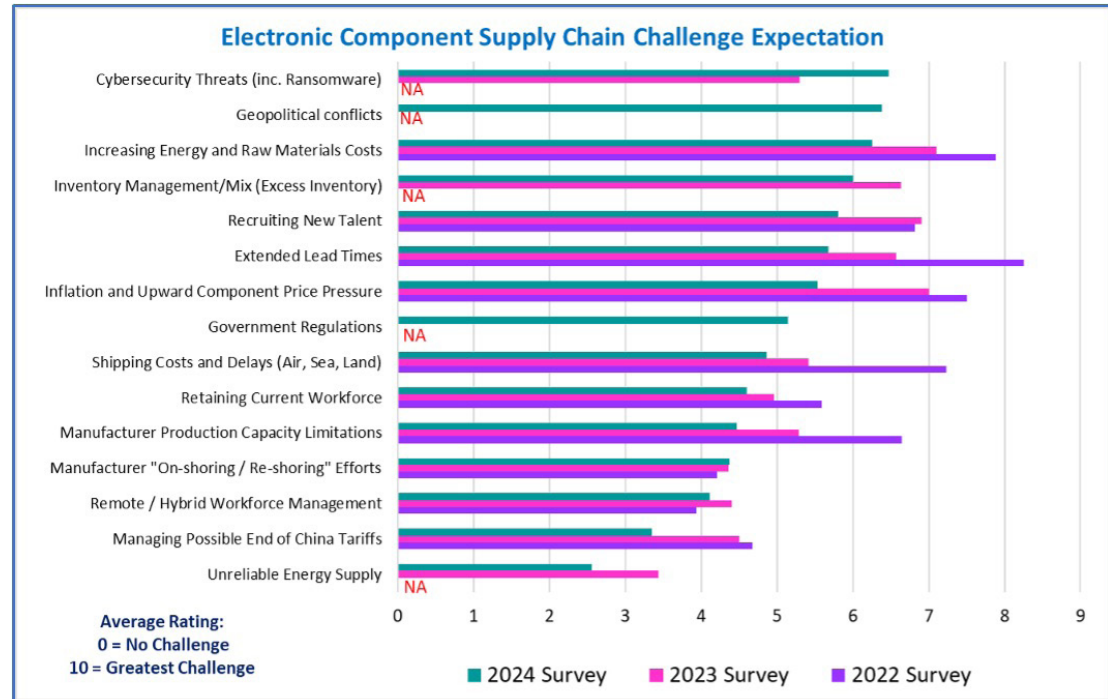
systems and things like that, what the OEM wants the OEM gets. So, they try to take that same model and try to apply it toward semiconductors. It doesn't quite work out the same. I think they're learning. The fact that their spend is going up significantly means that they have. They've got more motivation to be able to learn the right way to be able to deal with our supply chain."

According to Karim Yasmine, Executive Vice President, Global Product Marketing & Supplier Management at WT Microelectronics (Future Electronics), the pandemic has driven key changes in behavioral patterns in the supply chain. "I think one big change is that the work environment, whether you're a purchasing person, an engineer, distributor, or manufacturer has changed drastically. I think the day-to-day experience is different because many customers are not on site five days a week - purchasing managers, engineers. As a distributor, you have to now plan your days around their schedule and their availability on site and that human touch is still drastically important. You can say Teams is fantastic and it really helped us out through the pandemic more than I think any of us ever knew. But at the same time, now that we're post pandemic, we need to recreate these human touch points that were lost through the pandemic.

"There are different behaviors that have emerged. Part of it is the value of supply chain programs, I think are much more appreciated than they were previous to this cycle. I think the value of a distributor partner who has a strong supply chain program with bonded inventory capability and essentially a buffer that allows for some fluctuation in the industry. I think that we're seeing a lot of customers that were not on supply chain programs looking to get on them before the next cycle impact happens."

Yasmine continued to elaborate on customers coming to understand the value of authorized distribution. "With the majority of our customers, we had them buffered until the end of the year and we had additional pipelines through our supply chain program. So, we were able to buffer the pain pretty significantly at the beginning of the cycle. I think for customers that were on those programs, it reinforced their belief in that value. For customers that were on the outside looking in I think it was "We better protect ourselves when we get a chance. The traditional conversations used to be lead time and price through the cycle. Now it's, where's it being fabbed? Who's on the front-end? Who's on the back-end? Where's it coming from? Are there tariff implications?" The complexity of the supply chain has changed drastically. To summarize, I think that the value of the distribution network was emphasized through the cycle, which is a great thing for us, and I think that it gives us a great opportunity to protect customers through the next cycle."

Delivering a unique perspective based on her experience, Allison Sabia, Galco's President & CEO, explained a key change. "I would say the pandemic has had many long-term effects on business growth. You name it. It's affected every aspect of our life. I think it taught distributors a lot. I think the pandemic led to a lot less brand loyalty because they needed the part no matter who made it, right? Originally, your approved vendor list or AVL might have been your top five semi suppliers. At the end of the day, if there's five other suppliers that could make the part that you needed during the pandemic, when the supply chain was at a total standstill, you did what you had to do. If that selection worked, did you go back? Not necessarily. Particularly if the price point was higher. So, I think it led to a

lot of brand disloyalty. Actually, it was caused by suppliers not being prepared for a pandemic. I mean, who would be right? Nobody was prepared."

In addition, she noted that, "The distributor in the supply chain model was answering the customer's problem by giving a solution. It wasn't about not getting parts. It was about how do I fix your problem. If you know semi supplier #1 can't deliver but semi maker #3 can, well semi maker #1 is not going to fix that problem. Only a distributor can fix that problem. I think supply chain resiliency really helped make customers say, "Forget it. I don't want to go direct." Back then price didn't matter. It wasn't in the equation."

The entire world now understands what the supply chain is and why it is important. Riad Nazim, Master Electronics President, cautions that the lessons learned may still be forgotten. "It's so funny because before COVID, no one knew what supply chain was. Now, everyone knows what the supply chain is in the world. History repeats itself and with the slowdown in the market, we're seeing people order the lowest amount possible, not forecasting, going back to a little bit more price driven activity. So, although it has permanently changed things for the better, we do see shifting back to the Just-in-Time model already."

Viewing the Changing World Through the Lens of Distributors

According to Kevin Hess, "Geopolitical conflicts have had an impact on how companies conduct business globally. The biggest change we have seen is that companies have become less centralized, and are investing in additional resources, in multiple countries, instead of having to rely on one location. This gives companies the ability to diversify and become agile

Kevin Hess, Mouser Electronics, Senior VP of Marketing

David Loftus, ECIA, President & CEO

Mitch Enright, FDH Electronics, President

Yasmine provides insight on the regional shifts taking place. "In reality, regions like Mexico, regions like the rest of Asia, Philippines, Malaysia, Thailand, regions like Eastern Europe, India in time will all benefit from an influx of manufacturing and of purchasing of components. I think our job as distributors is to be truly global and have that exact same capability service level in all of those regions that we would have today in China for the customers that we're supporting in the region. I think Mexico is going to be a mass recipient of a lot of business and that doesn't

necessarily mean it's leaving to come back to Mexico, but it may mean that new projects are not taking off from the Americas and we'll head right into Mexico for regional locations. Same in Europe and Eastern Europe."

Turning to the important issue of compliance with legal requirements, Hess explains, "Tariffs, regulations, and controls have made international trade compliance challenging. Meeting these

in keeping up with demand. Manufacturers are moving their factories to multiple countries to spread out the supply chain risks."

Mitchell sees this change as an opportunity to deliver important value to customers. "That's a great place to be for Global Distributors like Arrow because more products will have to be able to move around the world nimbly. There must be easier identification of supply & demand from customers & suppliers. It's going to get more clouded by the number of locations that it will be in therefore we get to simplify that supply chain, aggregate the demand and with the right visibility tools and supply chain capabilities to ensure all of these increased centers get serviced seamlessly."

The increased responsibility that distributors need to take in this riskier global environment is illuminated by Karim Yasmine, "I think that certainly our job is to understand as distributors what is the impact, no matter where in the world, of a geopolitical issue. Obviously, the US-China one is much more visible and understood by our ndustry. But it's amazing when you start finding out that in Ukraine, Israel, and other parts of the world, there are some very strong specialties where they bring huge value to the supply chain that may not be as visible as China. I think again the job of the distribution network is to have a really good understanding so we can consult our customers on potential impact. Fundamentally, I think as distributors, we have to be aware of what's happening, and we have to be aware of the time shift that's happening and that there's a lot of manufacturing shifting out of certain regions. It doesn't actually mean the procurement is shifting out of a region and I think that's a fine line that needs to be monitored."

Karim Yasmine, WT Microelectronics (Future Electronics)
Executive Vice President, Global Product Marketing & Supplier Management

challenges has caused companies to add resources, such as people and additional systems in order to remain compliant. Investing in these additional resources has been very costly for companies, but it is something that has become critical in order to conduct business globally." Dayna Badhorn, Avnet, Regional President, Americas Electronic Components, builds on this issue and highlights the risks distributors face. "In addition to the rising cost of compliance, due to the implementation of new sanctions, additional tariffs, etc., the potential civil and criminal penalties for violations of import or export regulations and anti-corruption laws, by the company or its third-party agents, create heightened enforcement risks for the company's international operations."

As an industry association, David Loftus sees an important role for ECIA in supporting its members in this area. "Now that the downstream side with all of the constraints that are in place about where you can ship, and it's not just shipping to obvious bad places like North Korea, we have hundreds and thousands of entities out there in other places that you have to worry about cross shipping to the bad places. It's really a strong motivator for ECIA as an association to try to be proactive in helping work with government agencies and so forth, and trying to figure out ways that we can work together, share information and hopefully work productively together to be able to minimize product that's going to the wrong places, but also to try to protect our members from any kind of misunderstandings or missteps that might put them into hot water legally with the US government or others. It's just a much, much more complex world now than it was, say, pre-pandemic, or back in the 2015/2016 arena.

Yasmine sees the positive dimensions of government controls and costs as he explains, "I think it's a good thing that we're engaged with them. I think that we have the tariff piece that we just went through which was a big play and how that impacted our world from a compliance standpoint. Export controls are a good thing. The better the controls, the better for our business, the better for control of resales and the health of our industry. We've been very supportive prior to the ECIA involvement. We've got a heavy investment in trade and compliance and are supportive of any entity lists that have been coming our way or customers that are considered at risk. Every distributor has to have a very clear, capable way of limiting shipments to those customers.

"Tariffs means costs that are inherited through all these challenges. But at the same time, we wholeheartedly believe that from that standpoint, the investment is worth it because you're limiting resale erosion, you're limiting bad actors, you're limiting grey market support. I expect this to become a quarterly event where there are names added to the list that need to be controlled. I don't think it's a once-a-year event as it has been historically."

Bringing Production and Supply Chains Home

Adam Osmancevic, VP, Global Supplier Development at Arrow, provides a valuable summary of key points from his perspective regarding on-shoring/re-shoring/near-shoring/friend-shoring: "(1) We are certainly seeing the diversification of manufacturing as it will be more spread-out in many different countries (Mexico, India, Vietnam, Thailand & Malaysia) not fewer. Customers are increasing their investments in manufacturing both externally & internally with EMS and ODM's. (2) EMS & ODM's look to be the early winners as they increase their global footprints. We see India investing heavily into the semiconductor space. (3) Both Europe and the US are investing in their homelands, particularly as part of the de-risk strategy. (4) Arrow will be in an advantageous position to both customers and manufacturers & supply chain due to our global footprint. As everything becomes more global & diversified, we are going to be better positioned to support those companies as we move forward. (5) We can anticipate therefore the business profile by geography is going to change and it's going to be very different 2-3 years from now than it was pre-pandemic. Businesses will show up in places they haven't before."

Loftus expresses his view of the importance of efforts to return key manufacturing capability to the US. "I don't think we're going to put the genie back in the bottle as far as globalization. I don't think that it's smart or healthy for the entire electronic supply chain for US buyers to be in the US. There are benefits of lower cost labor around the world. There are certainly benefits in taking advantage of innovative engineering around the world that can make the world a better place. That being said, when it comes down to really critical technology and especially technology that applies to national security, with a lot of saber rattling that's going on around the world, it does make sense to make sure that there is a fair amount of advanced production capability close to home."

Loftus continues with the need to keep current government investments in proper perspective. "If something were to happen and China were to sail across the Taiwan Strait today, it would not just decimate this industry, it would decimate the worldwide economy—absolutely destroy the worldwide economy. It will take years and decades actually to put it back together. I think that it's a good thing for incentives to be there for advanced fabs to come back to the US. I think that with the CHIPS Act we're looking at a drop in the bucket of what it would really take to be able to have a reasonably secure supply chain even for defense and aerospace. There's too much of the semiconductor ecosystem that even if you spend all $52 billion of the CHIPS Act, it's going to move market share or production share in the world just by a few percentage points. It's not going to move it to anywhere close to 25%, let alone 50% or 75%, which I think some naive people would think that it does."

The need to act to be prepared to offer solutions as the world evolves and keys to success in the future are explained by Allison Sabia. "What we've tried to do is really think about it from the customer experience standpoint and what does the customer want. They want the right part at the right time for

**Adam
Osmancevic,
Arrow**, VP,
Global Supplier
Development

the right price. It's that simple, right? That's what they want. So, how do you take any of these things, whether it be the pandemic, the geopolitical problems, pricing, whatever, and make sure you have the best solution, so the customer gets the part they bought for the price they want when they want it? I believe that the industry is a little bit more prepared this time. I think the manufacturers who at tariff time took the ability to go build facilities onshore are ahead. They wanted in during the pandemic. They saw the writing on the wall years before and they took advantage of it. I think that there will be winners in this as there are distributors that have a long line card that really can get the customers the parts when they want them. The relationships that you build with the supplier and the end customer are really important. You want more partners that have begun building more facilities than the one production facility in China."

The Automotive World—Is it Electrifying?

Adam Osmancevic shares the enthusiasm surrounding electric vehicles (EVs) in recent years and the need to keep the long-term opportunity in mind. "If there is one industry that went from 0 to 60 the past few years, it's automotive. We are seeing a range of different approaches. Some auto manufacturers are doubling down on EV while others are starting to favor hybrid as a strategy as we have seen in recent announcements. Without question the EV market is driving growth. EV's sales are growing but at a rate lower than projected. The key point is that the EV market share as a percent of total transportation continues to grow. The growth in EV is also driving the growth in EV infrastructure and it's clear we have a long road ahead of us. If electronic content per car was impressive in combustion engines, it's even more impressive in EV with dollar content being 3X vs combustion engine. Beyond EV, hybrid will continue to grow and there is going to be investment in future technologies like hydrogen that will continue to fuel growth. We have seen more customers in the middle and emerging customers relying on distribution for the full solution stack from upfront design to production which is expected. For the Tier 1 OEMs we are seeing more interest in our global distribution services including visibility tools and buffer programs as a trend.

Yasmine also sees great opportunity in the EV/hybrid

Dayna Badhorn, Avnet, Regional President, Americas Electronic Components

auto market as suppliers of key electronic components. "To understand what we're dealing with from an automotive standpoint or a transportation standpoint—it's a very healthy business long term. Corrections happen in every business. But if you think about CAGRs long-term, industrial and automotive are large businesses for our industry. I think that the EV buzz, which I think was overstated for many years, is starting to show better controls. These assumptions of 50% of cars in Europe by 2030 would be EVs—those were very big, bold statements that were not really substantiated by anything

but a belief. Now, do I believe that in 10 to 15 years from now, the majority of cars won't be EVs? You have to believe that there will be way more on the roads than there are today.

"We can't forget that ICs are a massive opportunity because the ICs are getting smarter, they're getting way more options. Basic cars have more options. You've got ADAS, you've got IoT on board. So, there's still a great opportunity to drive content in internal combustion vehicles even if EVs seems to be maybe cooling down a little bit. I think that at the end of the day, electrification is going to continue. Now, whether that's fully EV or hybrid—I tend to think hybrid is going to have a better appeal. I think it's all good for our business because it doesn't matter what kind of engine you're talking about. The component spend is going to grow and that brings great opportunity for us as distributors. Not just to sell but to also design, consult on the right components for lighting, for dashboards, for infotainment, for whatever part of the car you're playing in. It's a lot more than just under the hood and brake systems. There's a great opportunity there."

The steep hill that we need to climb to reach the world of EV envisioned by many is presented

by Sabia as she elaborates on the many challenges we face. "I think the growth rate is supposed to be like 20% / 23% CAGR over the next five years till 2030. That's supposed to be a big market. 2023 was a big upset in the EV market. It wasn't anything that it was supposed to be. There are a million reasons, depending on who you ask. For me, I think it was a wake-up call that we don't have the infrastructure in place to be able to support going 100% EV. And it's not going to happen overnight, right? You look at some of these states like California that put in these rules that you have to have X amount of EV powered cars by whatever year. Well, that's great, but it's going to take you 15 years to figure out the infrastructure to deal with that. Think about these charging stations when a small percentage of the country drive EVs. But where's the infrastructure? I think it was completely an afterthought. Now as they started to put in rules and regulations around the EV market it was "Wow!", when you do that, here's all the things that we need. It would be crazy to think about how many things you have to get in place, right? Not only that, the batteries that go into these cars today, are they advanced enough in their technology to be sustainable for the population of the USA.

"I think it's unrealistic when you look at the price point of

your average EV car. You're not talking about a car that 60% of Americans can afford driving. By the way, in an economy that's not doing so great, they expect people to pay three and four or five times more for a car than the one they have currently. It just doesn't make sense. I think there's a lot of work to do in the overall market strategy and how we become more efficient on EV cars as opposed to regular cars. You can't think about just the car itself or the charger for that matter. You have to think about all of the things that go along with that, whether it be infrastructure, whether it

Riad Nizam, Master Electronics, President

Aiden Mitchell, Arrow, SVP, Global Supplier Management

be price point, whether it be charging stations. Think about how many drivers you have in California. I'm sure it's a large number. Now you're adding all these cars to the grid taking up electricity. How is that even possible? I think people were too early and did not understand the ramifications of the regulations around EV and now that's coming to fruition. I think the world will get there, but it's not going to be in the next 10 years. It's a big puzzle where we've only figured out one or two pieces and you can't change the world dynamic without figuring out the whole puzzle."

Drawing on lessons learned from the development of earlier markets, David Loftus envisions the path ahead for the EV market. "As far as EVs in general, there's an interesting book that was put out maybe 20 years ago called, "Crossing the Chasm"—how you get from early adopters to mass market acceptance. This is one of those situations where we're still in the early adopter phase. EVs in the US, for the most part, are still only in single digits. Low single digit total sales. In that phase there's going to be fits and starts. It's going to be based on incentives. It's going to be based on new models

that are compelling. It's going to be based on just societal acceptance at the same time. Right now, I just continue to think that we're going to be on a very volatile kind of growth curve for at least the next decade. There's a lot of discussion about whether the better solution for the next couple of decades is still hybrid because you get the best of both worlds where your trip to the local grocery store can be done totally electric. But I think it's undeniable that we will continue to move towards EVs just like consumer electronics. They'll continue to come down in price with scale. They'll continue to improve as far as performance goes."

AI and the "Smart" Supply Chain—An Essential Capability for Business Success

Kevin Hess provides a helpful summary of the role and benefits of AI. "Technology will play an important role for distribution in the supply chain. For example, AI can assist with forecasting, trends, and help identify gaps in processes. AI algorithms can analyze data in real time and provide information to drive improvements and optimizations. Also, machine learning and advances in smart factories will allow for distributors to improve practices and decrease order processing time. Investments in automation and technologies will allow employees to work smarter, improve accuracy and speed."

Delivering a very frank and descriptive opinion, Allison Sabia is very clear on the importance of AI to be competitive. "This is one of those things where if you're not already thinking about AI in your business, you're behind. If you haven't implemented some sort of AI in your business model

or practice, you're behind. This is the time. This is the same conversation of distributors 15 years ago that didn't have an e-commerce strategy. They were behind. So, I put AI in that same model. Quite honestly, it creates such a competitive edge that you cannot compete with those companies that use AI.

"There are so many examples. One of the top areas that I use it for is forecasting and inventory management. Look at Amazon today and their model. They're probably one of the best companies to study and learn how they use AI in their channel. These are the buying patterns of our customers, those are the people we know what they're going to buy, right? A human can't do that. I mean, if they could, it would take months to figure it out. So, you have to rely on big data that can form intelligent decisions to make the supply chain work right?"

Continuing on, Sabia highlights specific benefits delivered by AI. "Just-in-Time worked in the past for inventory. If I sell parts that are going to go out to California, I know what parts sell better where. When I'm spending marketing dollars, I make sure that I'm spending my marketing dollars in the markets that I know are going to convert the most. I can't do that. AI has to help me do that. It completely increases your speed to market, increases your decision-making skills with facts and data and will lead you to better results way quicker than a company that's doing everything by hand in every aspect of the business. I'm a true believer that if you're not using AI, you're behind for sure. We have millions of SKUs on our website and there's no way I could manage that with people only.

"AI gives me the ability to analyze sales patterns, customer preferences, and market trends. It helps us with today, which is really important, but it's not just about today. It's

about what I should do three months from now also. If you want to make sure in three months that you have what they need, you have to be able to do predictive analytics to make sure, particularly in a time when the economy is not doing so well, and cash is not king. You have to watch your expenses. That's when you have to make sure that you have AI and people that know how to interpret the data to make decisions that are most essential for your business."

In her comments Dayna Badhorn points to the value distributors can bring in supporting their customers with AI. " As more and more companies build and launch supply chain strategies around these emerging technologies, they are going to require trusted supply chain data to feed into these tools and platforms. I believe many companies are just starting to realize the data they require to enable these technologies may not be as readily available as they initially think. The solution we can help them with includes isolating their supply chain so the data can be collected, organized,

Allison Sabia, Galco, President & CEO

Technology Sales Growth Driver Average Ratings - Near term Outlook
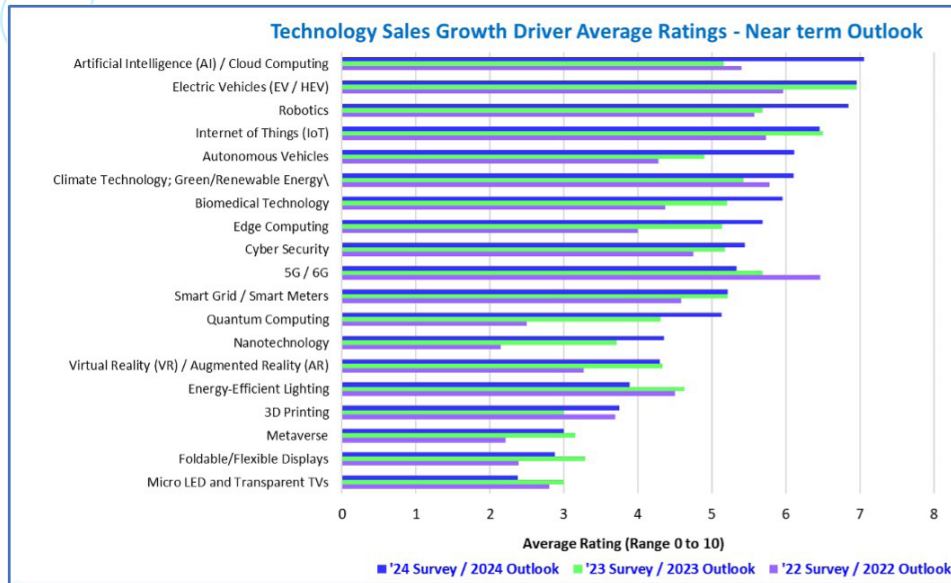
think we're really just in the infancy of the applications of artificial intelligence and machine learning as far as being able to help manage our businesses. I would say that there are companies including a lot of interesting startups in this space that are going to provide much greater value and insight into business planning that will hopefully help over the next few business cycles to cut off some of the extreme overshoot that we have seen in this market for 40 years. I really do hope and believe that artificial intelligence will be instrumental in trying to at least smooth out the curve a little bit over the next few business cycles and hopefully we get a lot more intelligence within the next decade that allows us to really do a better job of matching supply and demand."

normalized, and made available to their technology of choice."

Building on the comments from other executives, Yasmine describes the evolution from machine learning to the power of AI and the advanced capability it delivers. "We've been doing machine learning applications for years. We've been supporting customers on machine learning. It's just the scale of it now. I think the visibility is fantastic. The complexity of some of the processors that sit around some of these applications is incredible. They also require some strong specialty knowledge from a technical perspective, which I think all distributors like us are investing in. Fundamentally, from a supply chain perspective, there is so much room to be more efficient. We're looking at all the tools and meeting with companies that have a lot of these capabilities. It's about driving an efficient process quickly with quality to the customer. That's what we want to get done from a supply chain perspective.

I think in every part of the businesses, from the commercial to technical part, there's opportunity to improve through AI. There's so much data in our industry and with the right amount of AI, you can use the data for massive benefit that today is being manually manipulated and it just doesn't give you the output that an AI tool could."

Loftus expresses his hopes for the benefits the overall distribution industry can gain from AI. "There have been a lot of really smart PhDs working in our industry within our member companies for well over a decade trying to utilize the power of computing to be able to analyze business trends and help us. We're just scratching the surface. I

Technology Sales Growth Driver Average Ratings - Long Term Outlook
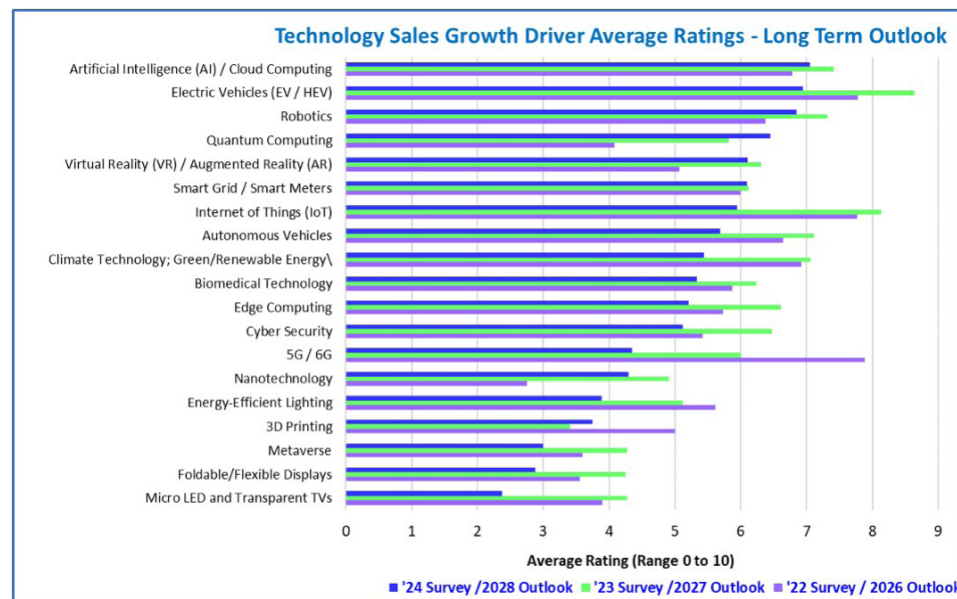
The Digitization of Business and Feet on the Street

"Customers want to be served via digital as well as traditional channels" according to Dayna Badhorn. She elaborates, "They want to be able to choose. They also want to see the same information regardless of the channel they choose. This means use of tried and proven technologies such as EDI and building out new capabilities in areas like APIs. We see growth in self service capabilities, and analytic capabilities allowing customers to review supply chain insights naturally in their daily workflow. For design engineers we are seeing new possibilities for part selection powered by AI search capabilities, and block diagram tools and APIs integrated into design tools."

Mitch Enright, President of FDH Electronics, shares Badhorn's view and believes, "distributors are realizing that having an online presence is now equally as important as having feet on the streets. As the workforce continues to transition to a more digital age, allowing our customers the ability to source their required materials online, if this is their preference, further allows us to meet their expectations. With that said, nothing can replace human interaction, and we are fully committed to offering our customers both."

Kevin Hess describes the range of benefits that can be delivered via digital tools. "Our website is not just a place to buy components—we offer a wealth of resources that customers need to make informed decisions, from industry trend reports and thought leadership pieces to learning materials and component information direct from

Expected 2024 Sales Growth Drivers
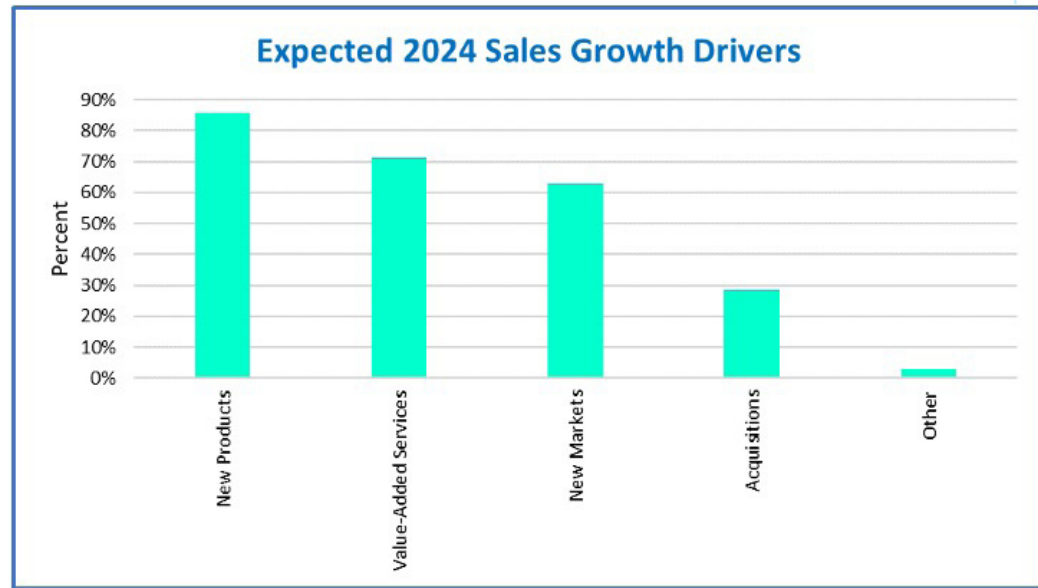
the manufacturers. To make buying easy, we provide a wide selection of online tools to simplify and optimize the browsing, selection and purchasing process. The Services and Tools page and Help Centre give customers the ability to view and track orders, request technical support and data sheets, and place orders via API or EDI, among many other features. Also, to help speed customers' prototypes and designs, Mouser.com has a library of technical resources, along with product data sheets, supplier-specific reference designs, application notes, technical design information, engineering tools and other helpful information."

Defending the importance of the human role in the distribution business, Yasmine states, "I would start by saying that we 100% still very much believe in human contact. For all the investments we'll make on the digital side as a company that is not at the detriment of a physical headcount. We still believe in design consultancy and supply chain consultancy, and it

happens in a hand-to-hand environment with physical people. Through the cycle that we just went through our marketing organization has never before spent that much time daily with customers because customers didn't want just a lead time guide. They didn't want an automated tool. They wanted to talk to a human who actually understands where the fab is. What is the impact? What is the output? What are the efficiency rates? A lot of it can be automated, but when it comes to these moments where I've got to get an answer because my entire production line is at play here, a human that can actually give me color beyond what a tool gives me is a big difference maker. For us it validates the fact that we strongly believe that you need balance between your digitalization efforts and your human interface efforts.

"The fundamentals of a website and API tools are survival tools for any business in today's world. Part of digitalization is online discussions like

we're having right now. But the reality is, if you and I don't see each other a couple times a year, we're not building a relationship. I think people underestimate the value of that face-to-face time."

With a contrasting perspective, Sabia presents the absolutely essential role of digitization in business. "I think relationships can't replace online business. There's always going to be a need for relationship building. That said, I don't think that should be the majority of the business that we do today. Number one, typically manufacturers care about selling their product to as many customers as possible. You can't compete with an online presence versus feet on the street. Just the cost to serve would put you out of business.

"When you launch an ad on a website, that ad is being seen globally within 5 seconds and the world is run by Google and Bing.

It's that simple. Except in Asia, where they have their own tools. So, you have to cast a wide net in terms of customer acquisition and lead prospects. Your only answer is digital. If you're not doing it digitally today, you are way behind, and you'll probably be out of business sooner rather than later. There's no scale with feet on the street. It's that simple. Are they needed? Yes. Do they build medium sized customers into large customers because of relationships? For sure. I get things done today from relationships. But scale only comes from the web. It's that simple. The pandemic pushed people ahead. Maybe they had a digital strategy that was going to take them out ten years. Well, now it is 18 months. They had to figure out how to get online if they wanted to keep their business afloat—particularly smaller companies. If they weren't, they probably had a pretty bad two years because people could only buy online.

"If you think of the dynamics and the profile of your typical buyer today, for a lot of them, that's how they communicate. They don't even make phone calls anymore. Everything is online, everything is mobile now. It's not just

e-commerce anymore. If you don't have a mobile app that people can use, you know they're not going to buy from you. They want access to do whatever they want when they want it. To be able to do that in a non e-commerce environment? Just imagine the cost! You're talking about 24/7 access to people to help customers all over the world. That's impossible. It's not practical. It's not scalable and it's not the future. If you don't have any e-commerce process right now and you're not doing things online, you're behind."

Cybersecurity Protection – Don't Do Business Without It!

Mitch Enright clearly states the importance of cybersecurity. "Ultimately IT infrastructure and cybersecurity has become one of the largest priorities for distributors in our industry. All of the compliance regulations that the US government has rolled out over the past 10 years (CMMC, NIST, etc.) have rightfully forced companies to take cybersecurity seriously." Riad Nazim adds, "It's an area that's just getting worse and worse as we all know. I think it has to be a priority by the executive team. It has

to be an investment in time, resources, and systems."

Kevin Hess points to the important standards that Mouser has implemented as a foundation to their cybersecurity processes. It is valuable to have an understanding of these standards as part of any cybersecurity strategy. "At Mouser, we value our employees' and customers' privacy and security. As such, we employ the highest data security standards and are dedicated to managing cyber security and minimizing risks through a comprehensive Information Security Management System (ISMS). For example, Mouser has received certifications in SOC2, ISO 27001 and Cyber Essentials, a set of domestic and international standards that support the requirements for an ISMS. This ISMS framework helps organizations mitigate and manage their cyber security risks and includes policies, processes, and controls designed to protect information assets from threats."
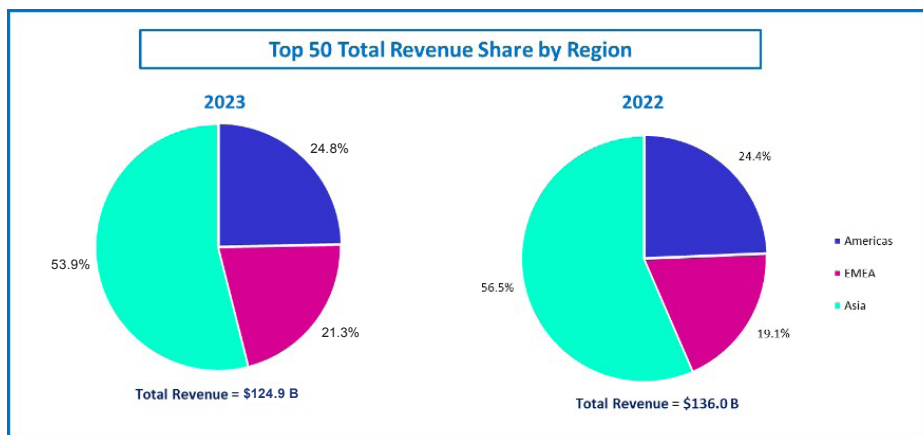
The multi-pronged approach to cybersecurity at Arrow is described by Osmancevic. "We have prioritized cyber security through investments in our risk management,

transparency and employee training. Vigilance and collaboration are the key in areas like: Risk assessment and mitigation. Supply chain visibility and transparency; Vendor risk management; Employee training and awareness; and Continuous monitoring and adaptive security."

Sabia emphasizes the necessity of cybersecurity to e-commerce and the importance of employee training. "I think the cyber security strategy goes hand in hand with e-commerce. You can't have e-commerce without cybersecurity because the customer only wants to do business with somebody they can trust. We had to spend a lot of money and invest in the cybersecurity strategy. What does that mean? We build things into our software. You've got to make sure that you have high tech software that understands how to deal with bots and viruses because these people are intelligent and all over the world.

"I also think it's important to make sure that the employees of these companies understand what it means. Like it is an email, you get a phishing attempt, right? How do they know? Are you training your internal employees to understand the difference between a real email and a fake email? We go out of our way to make sure that we have training videos that everyone has to pass.

"Again, it goes hand in hand. You can't have an e-commerce system in your company if you don't have a cybersecurity process. It's an investment, but it's way more expensive if something goes wrong. So, you have to

Top 50 Total Revenue Share by Region

2023
- 24.8%
- 53.9%
- 21.3%

Total Revenue = $124.9 B

2022
- 24.4%
- 56.5%
- 19.1%

- Americas
- EMEA
- Asia

Total Revenue = $136.0 B

ELECTRONICS sourcing

invest in it. It's an expense that's expensive up front, but cheap if something goes wrong if you don't have it."

TrustedParts and Aggregation Sites

Industry executives interviewed for this report were unanimous in the view that aggregation sites like TrustedParts.com play a highly valuable role that will continue into the future. Mitch Enright expresses his belief that, "aggregator sites like TrustedParts.com will continue to have an increasing role within the distribution industry. These sites allow our customers to view inventory availability across the distribution network as well as confirm which distributors are authorized by the manufacturer to sell the products they are procuring. These sites act as an extension of the sales teams for us as distributors and also an extension of the procurement teams for our customers." Echoing this view, Riad Nazim states, "We're big believers in them. I think it's a benefit to the customer and distributor and customers want to be able to find out who has what very easily in one spot. I think the future is there."

Yasmine shares his evaluation. "I will tell you that there's less

Total Americas Top 50 Authorized Distributor Revenue

than a handful of quality aggregator sites in our industry. They are high value resources to us and to the customer base and TrustedParts is obviously valuable for us because it's part of the authorized network so it's controllable. Fundamentally, it's a cost of volume equation. How much business is being driven by these guys into us and what is the cost to impact? I think TrustedParts is a highly efficient site from an aggregator perspective. I think we get a good return for what the investment is. In addition, if you actually use the activity that is coming in to look at trends and market shifts. It's an important

part of the intelligence that we generate through the aggregator space."

Arrow is a big believer in aggregator sites as evidenced by their creation of their own site. Adam Osmancevic explains, "Aggregation sites play a very important role from customer visibility, optimizing warehouse space & reducing lead times. We see aggregation sites playing a pivotal role in connecting all the key stakeholders and streamlining inventory. We collaborate with several of them across our digital sales process. We also have our own aggregation site called Verical, which is an Arrow-owned aggregation

site and is clearly seeing the benefit of aiding customer search for products. Verical is connected to sellers and buyers across over 2M unique parts that are 100% authentic traceable components."

David Loftus describes the risk mitigation benefits offered by TrustedParts. "The pandemic really accentuates the need for sites like TrustedParts. When people were struggling to obtain even inexpensive analog and power parts and they were having to go out to the grey market and procure parts a lot of times they were getting counterfeit product. They were getting product that was not warrantied and they would purchase parts and find failures. Sometimes it took failures for them to be able to find out that they did not have authentic product and companies suffered a lot of brand damage because of going outside the authorized channel. It really accentuates the need to be able to stay within the authorized channel and be able to have effective tools like TrustedParts to allow them to be able to search for inventory, especially in times where supply is tight. Hopefully, it's accepted as standard practice for most

Americas Top 50 Authorized Distributor Growth

ecia
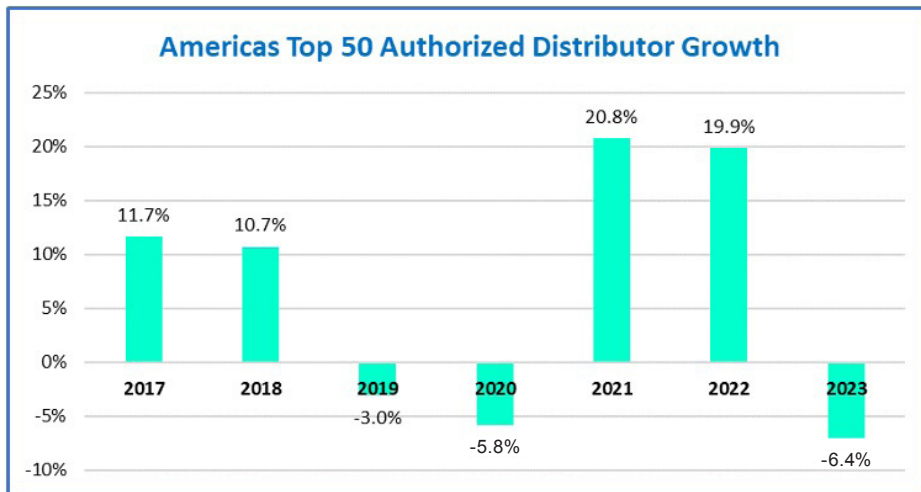
customers of the electronic components supply chain to be buying exclusively from authorized sources."

The Role of Regulations and the Need for Industry Representation

Aiden Mitchell points to the ever-present role of regulations and the benefits that they bring. He also highlights the important role of ECIA and GIPC in supporting the industry. "There's always been regulation in our industry. The industry evolved to meet it and it has never been something that has curtailed growth up to this point and it's unlikely to curtail growth in the future. There's a need for regulation in many different areas and in some cases, it's driving innovation and growth i.e. Green Energy Investments. Now it is driving technologies like SiC to automobiles to micro inverters, motors,
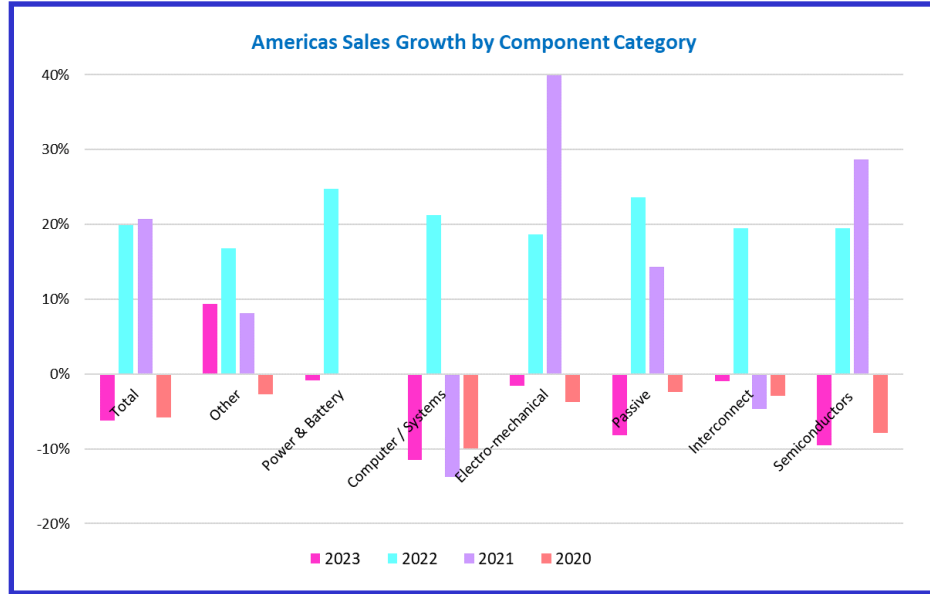
and drives. There is a greater shift towards ESG: regulations related to emissions, sustainability, and environmental standards may prompt manufacturers to reevaluate their supply chains. Regarding

collaboration and industry standards, this is why ECIA and the GIPC become so important for our industry."

Yasmine also endorses the work performed by ECIA in this area. "I like

the idea of having our association involved in this area. I think that it represents the community of reps, distributors, and manufacturers. When David and others from the association are interfacing,

Americas Sales Growth by Component Category

Legend: ■ 2023 ■ 2022 ■ 2021 ■ 2020

Americas Sales by Component Category

Millions of Dollars

Legend: ■ 2023 ■ 2022 ■ 2021 ■ 2020 ■ 2019 ■ 2018
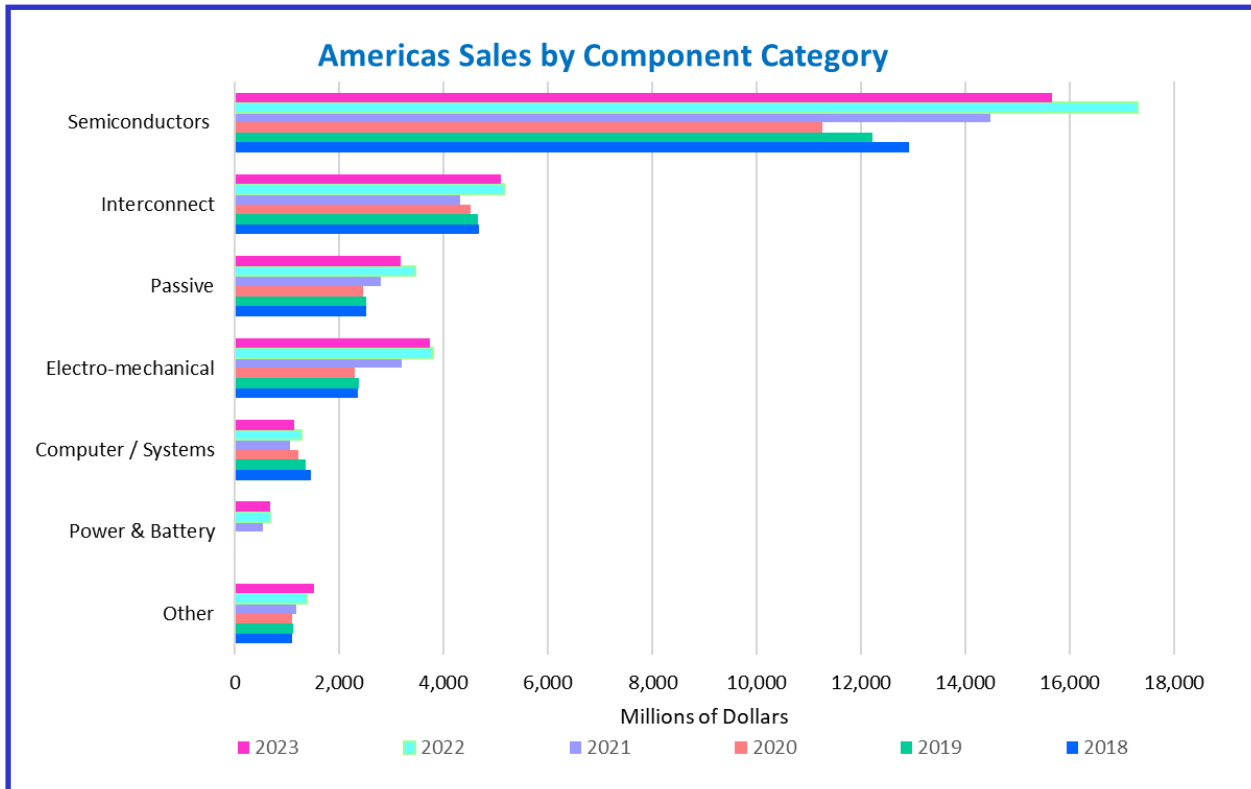
of course we have our own interface as an organization as I'm sure everyone does, but from my perspective, we don't want to get distracted from the base business. I think that's very important too. You can engulf yourself in a lot of this stuff and get sidetracked. We've got to have people assigned to it to work through the association to understand the concerns that are out there."

Allison Sabia also takes a positive view of regulations but notes the need for industry participation to promote a balanced approach. "There's pros and cons to be very honest. I think from a positive perspective, sometimes it's regulations that don't always put capitalism as its priority. So, I think sometimes the regulations are good. I don't know how many companies would have a practice or a belief if it wasn't the standard norm to do that today. So, I think in some cases it makes total sense if it makes the world a better place, why not? I think they need to be fair in their timing and how many and I do think they need to think about what

impact it has on business. I think what's bad is that you have people making regulations that don't understand the impact that it has on trade today, and that's a problem. If you're going to have government regulations, you need to have people who are involved in the businesses that are impacted to be part of the decision making. Having people who understand the impact on business involved in the conversations will yield regulations that actually make the world a better place and make the businesses feel like they're heard."

Finally, David Loftus describes the challenges presented by overly burdensome regulations and how ECIA has teamed with NAM to pursue more equitable government policies and standards. "Unfortunately, Washington is out of control. Especially the regulatory agencies. Unfortunately, they feel that they have carte blanche to be able to pass just about any kind of restriction on U.S. business that they feel like. While it's good to try to incentivize
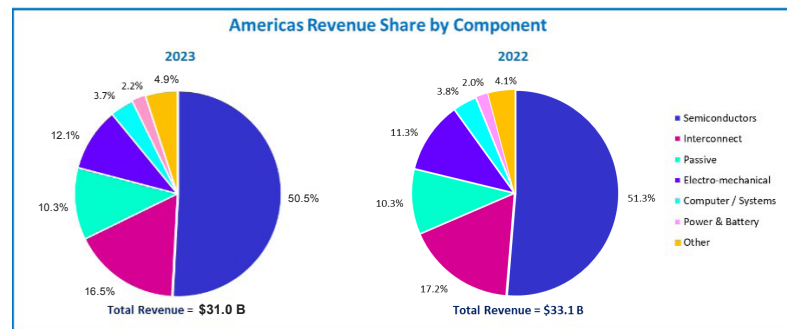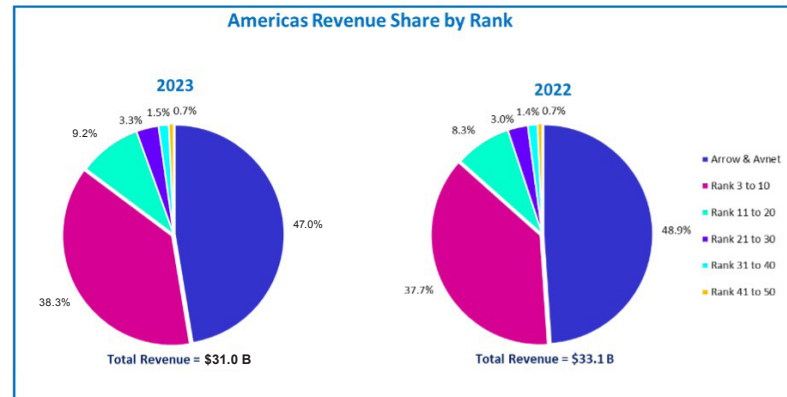
more manufacturing in the United States and, in our case specifically semiconductor and other high technology electronic components in the US and in North America, they're destroying the attractiveness of those incentives by requiring incredibly onerous conditions upon which to

secure those incentives or even operate in North America. It just astounds me that there are a lot of really intelligent people in DC, but they can't look at the whole picture and understand that while they're trying to solve one perceived problem in the environment, they are going to destroy the US economy and national security by putting these onerous requirements in place.

"Everybody wants cleaner air. Everybody wants cleaner water. But there's a practical limit as to what burden you can place on a business before a business is going to start moving elsewhere. I really enjoy the opportunity to work with the National Association Manufacturers (NAM). This is a situation where ECIA could try to do things in DC. But it's much more effective for us to be able to partner with hundreds of other manufacturing associations that represent hundreds of thousands of
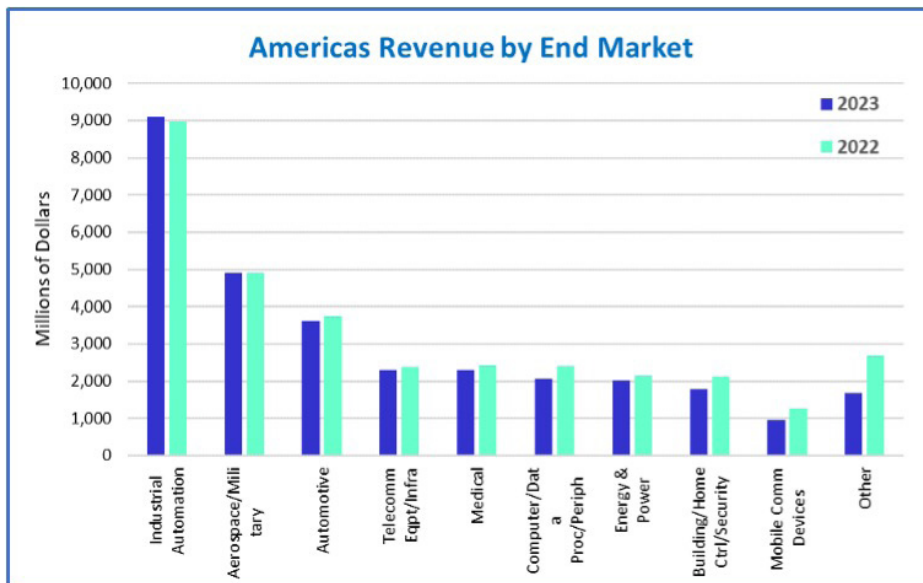
manufacturing businesses on issues that are really important for the success of manufacturing in the US."

The Top 50 Americas Authorized Distributor Survey Results

Before presenting the results for 2023 it is important to highlight key areas of methodology followed in preparing this report.

1. Only "Authorized Distributors" are included in the research and rankings. This is consistent with ECIA's mission to support the Authorized 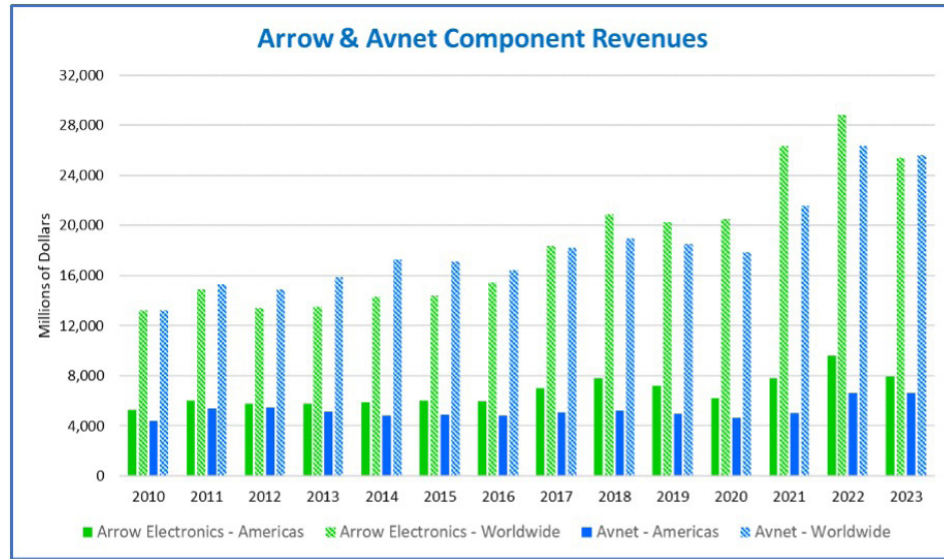Channel. As a result, brokers and others are no longer included, and they have been replaced by authorized distributors in the Top 50 rankings.

2. The revenues reported for Arrow Electronics are limited to include only their revenues associated with electronic component distribution. For Arrow Electronics this corresponds to their "Electronic Components" division.

3. In some cases, companies have not provided inputs in all areas of the survey. Where companies did not provide inputs for worldwide or Americas total revenues, estimates have been developed based on inputs from various sources including D&B. Where splits

Arrow & Avnet Component Revenues

Legend: ■ Arrow Electronics - Americas ▨ Arrow Electronics - Worldwide ■ Avnet - Americas ▨ Avnet - Worldwide

for revenues by component category or end market were not provided, estimates were developed based on various inputs and models. The market share is an ongoing work in process as feedback enables refined estimates.

Total Americas revenue for the Top 50 authorized distributors in 2023 declined by -7.2% to $30.7B from $33.1B. This same group of Top 50 companies saw their combined worldwide revenue fall by -8.4% from $136.0B to $124.6B between 2022 and 2023. Worldwide revenues took a major hit from difficulties in the Asia/Pacific region which suffered a -12.5% decline. In a pleasant result, EMEA revenue actually grew by 2.4% in this time period. The Americas share
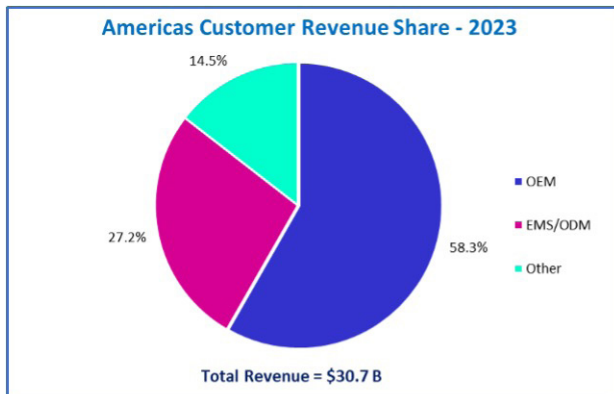
of revenues for these 50 companies increased slightly from 24.4% to 24.7% in 2023.

Americas revenues for the Top 50 distributors grew for two component categories in 2023 lead by Power & Battery with 10.3% growth followed by Passive Components with 0.5% growth. The largest component category, Semiconductors, saw its share of the total Americas market slip again from 52.3% to 50.9%. Over the five-year period from 2018 to 2023 total Americas distribution revenue grew by 4.2% Compound Annual Growth Rate (CAGR) with Passive components leading the way followed by Electro-Mechanical components at 6.7% and 5.3% CAGR, respectively. (Other is excluded from this comparison.) Semiconductors grew by 3.9% CAGR and Interconnect components achieved 2.2% CAGR growth. Power & Battery was added as a separate category for the first time in 2021.

The top two North America Distributors, Arrow Electronics' and Avnet, saw diverging growth in their Americas revenues in 2023. Arrow Electronics sales fell by 17.1% while Avnet's growth came in slightly positive at

0.1%. Both Avnet and Arrow experienced revenue declines on the global stage. Avnet saw their worldwide revenue decline by 3.0% and Arrow Electronics fell by 11.7%. The Top 10 companies in 2023 with revenues of $26.2B and a combined revenue share of 85.2% saw their revenues shrink by 8.7%. By comparison, companies ranked between 11 and 50 with combined revenues of $4.6B and combined market share of 14.8% saw their revenues grow by 2.3%. Average 2023 revenue for the Top 10 companies was $2.6B while average revenue for companies ranked 11 through 50 was $114M.

Once again, the largest end-market segments for Americas distributors in 2023 were Industrial Automation, Aerospace/Military, and Automotive, accounting for 27.8%, 15.0%, and 11.1% of the market, respectively. However, the market is fairly diversified with even the smallest segment, Mobile Communications, driving $1.3B in revenues in 2023. OEMs continued to be the largest customers of distributors with 58.3% of total Americas revenue.

Americas Customer Revenue Share - 2023

14.5% Other
27.2% EMS/ODM
58.3% OEM

Legend: ■ OEM ■ EMS/ODM ■ Other

Total Revenue = $30.7 B

The top 50 Americas authorized distributors

The final tables of this report present the complete list of Top 50 Americas Authorized Distributors for 2023 along with Top 10 rankings for individual component categories, top sales growth, and top revenue per employee.

Rank 2023	Rank 2022	Company	2023 Americas Sales ($ Thousands)	Growth 2023/2022 (%)	Share of Top 50 Total Sales (%)	Americas Share of Worldwide Sales (%)	Type*	Semiconductor (Active)	Passive Component	Electro-Mechanical	Interconnect	Computer/ Systems	Power & Battery	Other	Total Americas Employees	Sales per Employee ($ Millions)
1	1	Arrow Electronics, Inc. [2]	7,954,713	-17.1	25.88	31.3	1	74.0	6.4	4.5	4.6	7.0	-	3.5	6,500	1.22
2	2	Avnet (Includes Farnell) [2]	6,611,923	0.1	21.51	25.9	1	76.0	6.1	4.0	7.9	3.0	-	3.0	4,700	1.41
3	3	DigiKey	2,390,000	-14.6	7.71	57.6	3	36.2	19.0	13.3	20.5	3.9	7.0	0.2	3,927	0.61
4	5	TTI	2,070,000	3.5	6.73	54.8	2	-	45.0	6.5	48.5	-	-	-	2,039	1.02
5	4	Future Electronics [2]	2,000,000	-21.1	6.51	38.7	1	73.0	11.0	8.0	5.0	-	3.0	-	1,875	1.07
6	6	Mouser Electronics	1,657,200	-4.3	5.39	45.0	3	38.0	16.0	12.0	21.0	6.0	4.0	3.0	2,461	0.67
7	7	Wesco	1,223,600	-1.7	3.98	100.0	1	-	-	70.0	10.0	-	-	20.0	1,100	1.11
8	8	RS	1,149,480	32.8	3.74	32.0	1	1.0	1.0	30.0	14.0	10.0	10.0	34.0	1,200	0.96
9	9	DAC / Heilind [1]	947,000	13.1	3.06	76.9	2	-	-	19.9	80.1	-	-	-	740	0.92
10	10	Sager Electronics	441,000	-3.9	1.43	100.0	2	-	-	34.0	23.0	-	34.0	9.0	420	1.05
11	11	Master Electronics [2]	402,000	-8.6	1.31	74.6	1	10.0	17.3	25.9	38.8	5.0	-	3.0	500	0.80
12	12	WPG Americas	395,000	23.4	1.29	1.8	2	75.0	-	-	-	5.0	20.0	-	95	4.16
13	15	FDH Electronics (BJG+Electro Enterprises)	350,660	18.0	1.14	89.0	2	-	-	25.8	74.2	-	-	-	650	0.54
14	16	Bisco Industries	316,212	16.1	1.03	95.3	1	1.0	20.0	40.0	20.0	1.0	2.0	16.0	586	0.54
15	13	Nexty Electronics [1]	285,000	-10.4	0.93	6.3	1	85.0	4.0	3.0	5.0	1.0	-	2.0	130	2.19
16	17	Powell Electronics	257,548	5.3	0.84	89.8	1	-	-	11.0	89.0	-	-	-	240	1.07
17	14	Supreme Electronics [1]	237,070	-22.6	0.77	4.9	1	95.8	1.3	2.9	-	-	-	-	175	1.35
18	18	RFMW	210,000	0.0	0.68	72.7	2	60.0	25.0	-	15.0	-	-	-	100	2.10
19	21	Macnica	207,817	48.2	0.68	3.0	1	100.0	-	-	-	-	-	-	97	2.14
20	19	PEI-Genesis [1]	188,000	-2.2	0.61	63.4	1	-	-	-	100.0	-	-	-	330	0.57
21	20	Galco Industrial Electronics	161,600	0.7	0.53	100.0	1	1.0	1.5	15.8	10.2	-	-	71.5	218	0.74
22	23	Richardson Electronics [2]	141,084	27.2	0.46	53.7	2	66.0	14.0	1.0	4.0	-	5.0	10.0	350	0.40
23	22	Hughes-Peters	121,000	3.4	0.39	100.0	1	3.0	30.0	40.0	25.0	-	-	2.0	160	0.76
24	26	Flame Enterprises	98,000	11.4	0.32	96.6	2	-	-	98.0	2.0	-	-	-	62	1.58
25	25	Symmetry Electronics	91,000	-13.3	0.30	85.8	2	98.0	-	-	-	2.0	-	-	80	1.14
26	24	Steven Engineering	90,161	-16.8	0.29	91.4	2	-	-	35.0	35.0	7.0	2.0	21.0	120	0.75
27	29	Marsh Electronics	85,060	11.5	0.28	100.0	1	6.0	13.5	27.8	6.0	-	1.3	45.4	138	0.62
28	28	SIIX [1]	80,000	1.3	0.26	9.4	1	95.0	-	-	-	-	-	5.0	60	1.33
29	33	All Tech Electronics, Inc.	73,900	32.0	0.24	100.0	2	90.0	5.0	5.0	-	-	-	-	37	2.00
30	32	Brevan Electronics	72,500	26.7	0.24	100.0	1	30.0	30.0	25.0	5.0	1.0	4.0	5.0	63	1.15
31	30	Peerless Electronics [1]	61,000	-18.4	0.20	100.0	1	4.0	4.0	75.0	8.0	-	-	9.0	105	0.58
32	31	Area51 Electronics	60,048	-3.7	0.20	99.1	1	10.9	32.8	9.3	9.2	1.0	4.6	32.2	67	0.90
33	27	Flip Electronics	54,900	-33.7	0.18	58.5	2	100.0	-	-	-	-	-	-	90	0.61
34	39	Rutronik Elektronische Bauelemente GmbH	50,000	31.6	0.16	3.5	1	43.0	41.0	13.0	-	3.0	-	-	50	1.00
35	40	Falcon Electronics, Inc.	46,500	24.0	0.15	98.9	2	99.0	-	1.0	-	-	-	-	19	2.45
36	34	EDOM Technology Co., Ltd.	43,496	-11.8	0.14	1.3	1	100.0	-	-	-	-	-	-	20	2.17
37	37	Beyond Components [1]	39,400	-8.1	0.13	100.0	1	4.0	4.0	75.0	7.0	-	-	10.0	70	0.56
38	36	Edge Electronics, Inc. [1]	39,100	-10.1	0.13	85.4	1	52.4	1.8	1.0	1.8	21.0	3.0	19.0	35	1.12
39	38	NASCO Aerospace & Electronics	37,417	-1.6	0.12	100.0	1	25.0	5.0	25.0	25.0	10.0	5.0	5.0	30	1.25
40	41	CDM Electronics [1]	32,100	-10.1	0.10	91.8	1	-	-	6.0	94.0	-	-	-	120	0.27
41	35	Diverse Electronics	31,600	-34.8	0.10	84.3	1	14.0	13.0	22.0	28.0	3.0	19.0	1.0	48	0.66
42	42	Ryoden [1]	27,300	-8.0	0.09	2.2	1	87.6	12.4	-	-	-	-	-	10	2.73
43	46	Sherburn Electronics	26,000	23.8	0.08	100.0	2	10.0	20.0	35.0	25.0	10.0	-	-	11	2.36
44	43	NEP Electronics [1]	24,500	-9.6	0.08	100.0	1	10.0	10.0	60.0	10.0	-	-	10.0	125	0.20
45	44	World Micro Components / MIT Distributors [1]	24,000	4.3	0.08	92.1	2	50.0	14.0	8.0	11.0	-	10.0	7.0	45	0.53
46	45	Bluff City Electronics	21,000	-7.9	0.07	100.0	1	5.0	10.0	70.0	-	5.0	-	10.0	36	0.58
47	49	Microwave Components LLC	20,000	11.1	0.07	80.0	2	-	2.0	3.0	95.0	-	-	-	25	0.80
47	48	Kensington Electronics, Inc	20,000	8.1	0.07	92.1	1	-	95.0	-	4.0	-	-	1.0	26	0.77
49	47	PUI	17,890	-10.1	0.06	89.3	1	16.0	25.0	50.0	9.0	-	-	-	31	0.58
50	50	S.A.S. Dragon [1]	12,140	-31.0	0.04	0.6	1	86.0	6.0	7.6	-	-	-	0.4	10	1.21
		TOTAL TOP 50	30,996,919	-6.4	100.00	24.8		50.9	11.3	10.0	16.9	3.7	2.2	5.0	30,126	1.02

*Type of Distributor: 1 = Broadline; 2 = Specialized; 3 = High Service/E-Catalog
Notes: [1] ECIA Estimate for Total North America Sales and Sales Breakdown [2] ECIA Estimate for Sales Breakdown [3] ECIA Estimate for Total North America Sales

ECIA TOP 50 *Americas* Authorized Distributors Report 2024

ELECTRONICS sourcing

Top 10 semiconductor (active) sales

Rank 2023	Company	2023 Americas Sales ($ Millions)	Share of Top 50 Total Sales (Percent)
1	Arrow Electronics, Inc. [1]	5,886.5	37.63
2	Avnet (Includes Farnell) [1]	5,025.1	32.12
3	Future Electronics [1]	1,460.0	9.33
4	DigiKey [1]	864.1	5.52
5	Mouser Electronics	629.7	4.03
6	WPG Americas	296.3	1.89
7	Nexty Electronics (Toyota Tsusho +Tomen) [1]	242.3	1.55
8	Supreme Electronics [1]	227.1	1.45
9	Macnica	207.8	1.33
10	RFMW	126.0	0.81
	Others	677.8	4.34
	TOTAL TOP 50	**15,642.7**	**100.00**

Top 10 passive component sales

Rank 2023	Company	2023 Americas Sales ($ Millions)	Share of Top 50 Total Sales (Percent)
1	TTI	931.5	29.28
3	Arrow Electronics, Inc. [1]	754.0	16.00
2	DigiKey [1]	453.6	14.26
4	Avnet (Includes Farnell) [1]	403.3	12.68
5	Mouser Electronics	265.2	8.33
6	Future Electronics [1]	220.0	6.92
7	Master Electronics [1]	69.5	2.19
8	Bisco Industries	63.2	1.99
9	RFMW	52.5	1.65
10	Hughes-Peters	36.3	1.14
	Others	177.1	5.57
	TOTAL TOP 50	**3,181.3**	**100.00**

Top 10 electro-mechanical sales

Rank 2023	Company	2023 Americas Sales ($ Millions)	Share of Top 50 Total Sales (Percent)
1	Wesco	856.5	22.88
2	Arrow Electronics, Inc. [2]	358.0	9.56
3	RS	344.8	9.21
4	DigiKey [2]	317.6	8.48
5	Avnet (Includes Farnell) [2]	264.5	7.06
6	Mouser Electronics	198.9	5.31
7	DAC / Heilind [1]	188.5	5.03
8	Future Electronics [2]	160.0	4.27
9	Sager Electronics	149.9	4.00
10	TTI	134.6	3.59
	Others	770.6	20.58
	TOTAL TOP 50	**3,743.8**	**100.00**

Top 10 interconnect sales

Rank 2023	Company	2023 Americas Sales ($ Millions)	Share of Top 50 Total Sales (Percent)
1	TTI	1,004.0	19.67
2	DAC / Heilind [1]	758.5	14.86
3	Avnet (Includes Farnell) [2]	522.3	10.23
4	DigiKey [2]	489.3	9.59
5	Arrow Electronics, Inc. [2]	365.9	7.17
6	Mouser Electronics	348.0	6.82
7	FDH Electronics (BJG+Electro Enterprises)	260.2	5.10
8	Powell Electronics	229.2	4.49
9	PEI-Genesis [1]	188.0	3.68
10	RS	160.9	3.15
	Others	778.6	15.25
	TOTAL TOP 50	**5,105.0**	**100.00**

Top 10 computer/system product sales

Rank 2023	Company	2023 Americas Sales ($ Millions)	Share of Top 50 Total Sales (Percent)
1	Arrow Electronics, Inc. [1]	556.8	49.04
2	Avnet (Includes Farnell) [1]	198.4	17.47
3	RS	114.9	10.12
4	Mouser Electronics	99.4	8.76
5	DigiKey [1]	92.5	8.15
6	Master Electronics [1]	20.1	1.77
7	WPG Americas	19.8	1.74
8	Edge Electronics, Inc. [1]	8.2	0.72
9	Steven Engineering	6.3	0.56
10	NASCO Aerospace & Electronics	3.7	0.33
	Others	15.3	1.35
	TOTAL TOP 50	**1,135.4**	**100.00**

Top 10 power & battery sales

Rank 2023	Company	2023 Americas Sales ($ Millions)	Share of Top 50 Total Sales (Percent)
1	DigiKey [1]	168.4	25.06
2	Sager Electronics	149.9	22.31
3	RS	114.9	17.11
4	WPG Americas	79.0	11.76
5	Mouser Electronics	66.3	9.87
6	Future Electronics [1]	60.0	8.93
7	Richardson Electronics [1]	7.1	1.05
8	Bisco Industries	6.3	0.94
9	Diverse Electronics	6.0	0.89
10	Brevan Electronics	2.9	0.43
	Others	11.1	1.65
	TOTAL TOP 50	**671.9**	**100.00**

Top 10 distributors by sales growth

Rank 2023	Company	Sales Growth 2023/2022 (Percentage)	2023 Americas Sales ($ Millions)	2022 Americas Sales ($ Millions)
1	Macnica	48.2	207.8	140.2
2	RS	32.8	1,149.5	865.8
3	All Tech Electronics, Inc.	32.0	73.9	56.0
4	Rutronik Elektronische Bauelemente GmbH	31.6	50.0	38.0
5	Richardson Electronics	27.2	141.1	111.0
6	Brevan Electronics	26.7	72.5	57.2
7	Falcon Electronics, Inc.	24.0	46.5	37.5
8	Sherburn Electronics	23.8	26.0	21.0
9	WPG Americas	23.4	395.0	320.0
10	FDH Electronics (BJG+Electro Enterprises)	18.0	350.7	297.3
	Others	-8.6	28,484.0	31,177.4
	TOTAL TOP 50	**-6.4**	**30,996.9**	**33,121.3**

Top 10 sales per americas employees

Rank 2023	Company	2023 Americas Sales ($ Millions)	Americas Employees	Sales per Employee ($ Millions)
1	WPG Americas	395.0	95	4.16
2	Ryoden [1]	27.3	10	2.73
3	Falcon Electronics, Inc.	46.5	19	2.45
4	Sherburn Electronics	26.0	11	2.36
5	Nexty Electronics [1]	285.0	130	2.19
6	EDOM Technology Co., Ltd.	43.5	20	2.17
7	Macnica	207.8	97	2.14
8	RFMW	210.0	100	2.10
9	All Tech Electronics, Inc.	73.9	37	2.00
10	Flame Enterprises	98.0	62	1.58
	Others	29,583.9	29,545	1.00
	TOTAL TOP 50	**30,996.9**	**30,126**	**1.03**

Note = (1) ECIA Estimate