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INTERNATIONAL DISTRIBUTION OF ELECTRONICS ASSOCIATION

IDEA FEDERATION NEWSLETTER

Covid-19: which implications for the semiconductors industry?

As the reopening of economies continues across Europe and North America, it's worth understanding which are the epidemiological situation and trends that will define the months ahead.
And while in many places (like Brazil or india for example) the epidemic is getting worse, the next few weeks will be critical tests of our ability to *"bend the curve"* in more countries with varying contexts and healthcare capacity.

SEMICONDUCTORS, AN OVERVIEW

According to **McKinsey**, the worldwide semiconductors' demand is expected to decline by 5 to 15% for this year compared to 2019. Breaking down this projection by major end markets, like PC or server, wireless and wired communication, consumer electronics, automotive, and industrial applications, there are some differences that can be explained by the diversity of underlying trends that affect demand for semiconductors, and the varying impact of macroeconomic forces on each end market.

PC or server: chip demand for the PC and server end market is expected to drop by 1 to 7% in 2020. Demand for PC semiconductors will decline by 3 to 9%, mostly because companies will delay planned hardware upgrades and other long-term migration projects.
However, in late 2020, the semiconductor market for servers could increase by 1 to 7%, driven by a strong demand for managing video streaming and conferencing for smart working requests.

"IN 2020, THE WORLDWIDE SEMICONDUCTORS' DEMAND IS EXPECTED TO DECLINE"

Wireless communication: ICs demand for wireless communication applications will see one of the sharpest drops in 2020, with an expected decrease of 11 to 26%. The level of mobile-phone sales, in particular, is expected to drop significantly over the coming months.

Wired communication: by contrast, demand for semiconductors used in wired communication applications will increase by 8 to 11% in 2020 because of several factors related to security upgrades for existing infrastructures, an increase in fixed broadband usage and a higher internet traffic, which will spur demand for switches and routers. Also, a greater demand for cloud services and associated computing nodes will increase the need for optoelectronics in data center fiber connections.

JUNE 2020

ASSOCIATIONS

AREI - SOUTH AFRICA
Association of Representatives for Electronics Industry

ASPEC - RUSSIA
Association of Suppliers of Electronic Components

ASSODEL - ITALY
Associazione Nazionale Fornitori Elettronica

CEDA - CHINA
China Electronics Distributor Alliance

ECAANZ - AUSTRALIA
Electronic Components Association Australia and New Zealand

ECIA - UNITED STATES
Electronic Components Industry Association

ECSN - UNITED KINGDOM
Electronic Components Supply Network

ELCINA - INDIA
Electronic Industries Association of India

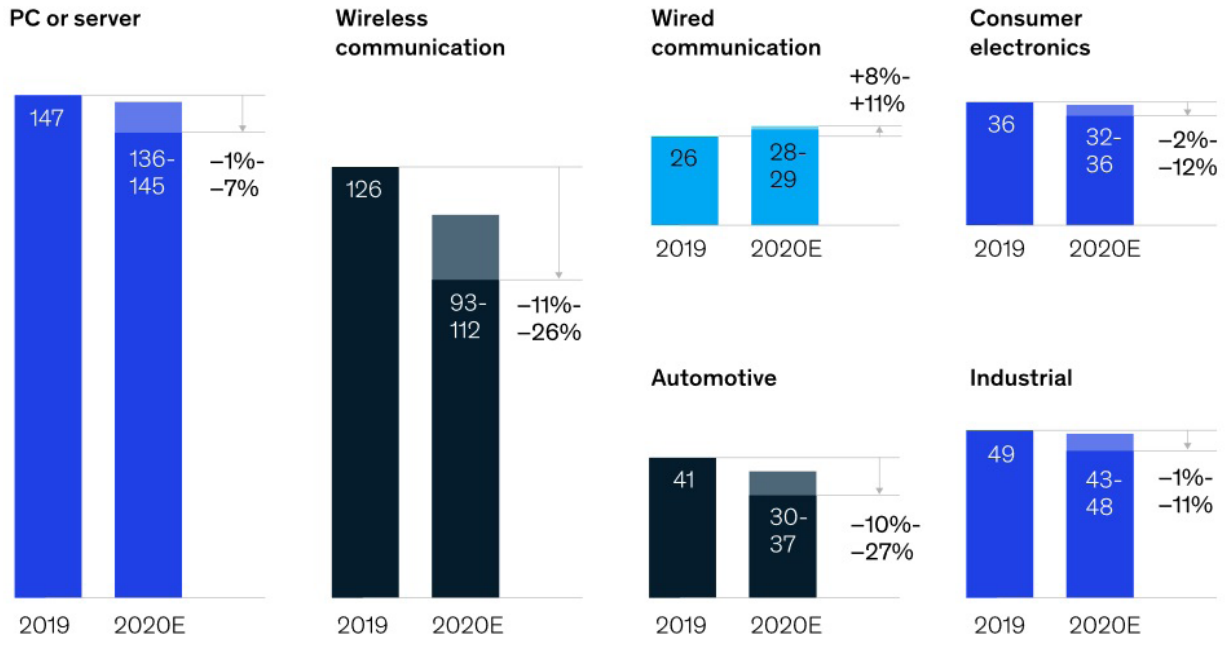
FBDI - GERMANY
Fachverband der Bauelemente Distribution

FEDELEC - TUNISIA
Tunisian Federation of Electric and Electronic Industries

SE - SWEDEN
Svensk Elektronik Trade Associations

SPDEI - FRANCE
Syndicat Professionnel de la Distribution en Electronique Industrielle

AN OVERVIEW: SEMICONDUCTORS CONSUMPTION BY APPLICATIONS



[1]Products include memory, microcomponents, logic, analog, discrete, optoelectronic, and sensors/actuators. The estimates for 2020 were calculated using a 2019 baseline and percentages have been rounded.

Source: IHS, McKinsey analysis

Consumer electronics: demand for consumer-electronics semiconductors is expected to drop by 2 to 12% in 2020.

Automotive: sales of semiconductors for automotive applications primarily depend on car sales volume and the level of vehicle digitization and electrification. Since global automotive demand has already fallen sharply this year, the automotive semiconductor market is expected to decrease by 10 to 27 percent in 2020.

Industrial applications: within industrial applications, the major demand drivers for semiconductors include investments in medical electronics, aerospace equipment, power and energy products, as well as upgrades to lighting solutions. Demand is expected to decline for all of these end markets through 2020 as companies postpone infrastructure investments, reduce manufacturing activities, or decrease operations. Overall, semiconductor demand for industrial applications is expected to fall 1 to 11% this year.

BACK TO NORMALITY

Most semiconductor companies have already passed through the first two phases or are currently addressing challenges related to reduced workforce availability and near-term cash management. Experience has also shown, however, that **companies should do far more than handling operational challenges during economic downturns if they want to emerge stronger post-crisis**. Despite focusing on operational issues that require immediate attention, semiconductor leaders would also benefit by **thinking ahead**—and that will involve progressing through the return, reimagine, and reform phases as quickly as possible…

SEMICONDUCTOR COMPANIES MUST EMBARK ON A JOURNEY THAT INCLUDES 5 PHASES

Here's how they should proceed

Resolve	Resilience	Return	Reimagination	Reform
Address the immediate challenges that COVID-19 represents to semiconductor workforce, customers, and business partners	Address near-term cash-management challenges and broader resiliency issues during virus-related shutdowns and economic pressures	Create a detailed plan to return the business back to scale quickly, with a focus on adapting your demand planning, product pricing, and sourcing strategy, as well as ensuring a smooth ramp-up of production	Reimagine the "next normal"—understand how macroeconomic developments will impact semiconductor- industry dynamics and understand how your institution should reinvent itself to adapt	Closely monitor regulatory and competitive developments

Source: IHS, McKinsey analysis

US again steps up export regulations…

In their forecasts at the end of last year Leadership Group members of the International Distributors of Electronics Association (IDEA) predicted that our industry might have to contend with a number of fairly major political upheavals in 2020, some of which could seriously restrict growth in the global electronic components markets. COVID-19 of course wasn't foreseen but the global economic recession triggered by the pandemic is likely to be ratcheted up by the US government's imposition of technology restrictions, which can only further exacerbate electronic components supply network issues. In this article IDEA chairman Adam Fletcher provides an update on the latest US export regulations.

ADAM FLETCHER, ECSN

US / CHINA INITIAL TRADE PACT

In the New Year '20 Global stock markets surged on the news that the US and China had agreed an initial trade pact, the terms of which cancelled the import tariffs the US planned to impose on Chinese-made mobile phones, toys and laptop computers but left in place the 25% tariffs on a $250-billion array of Chinese industrial goods and components used by U.S. manufacturers.

The agreement was greeted as a big win for technology markets because it forced some very interesting changes to how the Chinese legal system responds to issues surrounding **international standards on Intellectual Property (IP) theft, Trade Secrets (TS) and Confidential Business Information (CBI)**. One of the most useful of these changes is that Chinese businesses and Chinese Government organisations and agencies are now required to acknowledge pre-existing IP ownership, TS and CBI issues. Further, it mandates that current breaches are to be uprated from *"Administrative"* to *"Criminal"* enforcement issues and that appropriate tariffs (fines, penalties, jail terms) are to be put in place.

ENTER COVID-19…

The Covid-19 outbreak started in Wuhan China in January '20 but rapidly became a global pandemic. Many organisations were severely affected as the population lock-downs spread around the world but the political fallout between China and many advanced Western economies has recently increased primarily because of a perception that the Chinese government has withheld information it holds on the outbreak that could possibly have significantly reduced the loss of life and mitigated the global economic impact. The Chinese government's current policy of disinformation and the arbitrary imposition of trade sanctions against dissident nations are widely seen as not helpful and nor for that matter are recent comments from the US President. Neither has done anything to calm a Global emergency, which ultimately will only be resolved by a united international effort.

Overall, the global electronics industry has fared reasonably well during the Covid-19 pandemic. Generally speaking, its managed to continue to operate fairly well, although significant disruption was caused in Q'1 to the supply chains of Tier 1 manufacturers reliant on Just In Time (JIT) deliveries to their international operations. Most customers for electronic components are however served by manufacturer authorised distributors who maintain large buffer inventories and as a result, were able to shelter their customers from the worst supply network disruptions. In Europe the electronic components distributor total available market (DTAM) experienced a revenue decline of (10%) in Q1'20 and is widely expected to experience a larger decline in Q2'20, feared to come out at around (20%-to-25%).

> "NEITHER HAS DONE ANYTHING TO CALM A GLOBAL EMERGENCY, WHICH WILL ONLY BE RESOLVED BY A UNITED INTERNATIONAL EFFORT"

US / CHINA TRADE WAR RUMBLES ON

There are **114 Chinese organisations** (including Huawei) who remain on the US 'table of denials' for the purchase of US technology products, services and software for use in the design and manufacture of their equipment.

On the **15th May** the US Department of Commerce announced that semiconductor designs produced by any organisation on the 'table of denials' list or their partners (suppliers or customers) are made subject to additional export administrative legislation. Effectively this means that US technology suppliers will need a licence from the US Department of Commerce for any use of US intellectual property (software, hardware, IP etc) to those organisations on the *'table of denials'*, which in practice will mean that affected organisations will find

it very difficult to design and manufacture advanced semiconductor products without a licence. The US has confirmed that this legislation impacts wafer starts on 15th May and will only allow a **120-day grace period** to ship any work in progress.

This legislation will have a profound impact on organisations like Huawei who will struggle to design, test, manufacture, package and final test advanced semiconductor components and without the appropriate licence, will not be able to have their advanced semiconductor products made at leading foundries like TSMC. Huawei has complained that this action is unjustified and previously has been able to get around US legislation by using its subsidiaries and partners to purchase products on its behalf and in the short term, has been able to continue manufacturing operations by stockpiling advanced semiconductors.

MUTED RESPONSE

Whilst Chinese organisations are reliant on leading edge Western technology, Western organisations are also reliant on Chinese organisations for a huge range of low to medium technology mass produced products, where they now have little manufacturing capacity. There are a number of possible solutions to organisations who find themselves on the US's *'table of denials'* list.

They could attempt to design either using their existing or in-house variants of existing tools or use alternative semiconductor foundries and test houses who have the relevant expertise but aren't dependent on US technology. Whilst this may be possible with legacy products and design rules, it will be very difficult to achieve for the advanced semiconductor products that these organisations need to use in their latest designs. The easiest solution for all is probably just to request an export licence from the **US Department of Commerce** and see what the conditions of licencing are. Having reviewed the previous agreements signed by the US and China I suspect that these conditions will probably be balanced and fair. After all, it would be very difficult for either government to publicly defend licence terms that were not…

> "AFFECTED ORGANISATIONS WILL FIND IT VERY DIFFICULT TO DESIGN AND MANUFACTURE ADVANCED SEMICONDUCTORS"

The *'Table of Denials'* list is also a significant problem for US technologists for whom these innovative organisations are valuable customers, as are the large semiconductor foundries and the multitude of specialist organisations embedded in their supply chains. It also impacts the mutual dependence, trust and goodwill that has been developed at many levels between suppliers and their customers. However, important intellectual property and know-how has been widely misappropriated by Chinese organisations (and therefore the Chinese state) from Western technologists for over thirty years and this haemorrhaging has to be stopped!

FINAL THOUGHTS

Whilst acknowledging that access to and the control of intellectual property are critically important to economic growth for all, in the interim and until this trade dispute and ramifications of COVID-19 are resolved, we'll almost certainly have to manage with more disruptions in the electronic components supply network.

I encourage you and your organisation to play your part in the communication process, both up and down your supply network, it costs nothing and can yield significant rewards along with improved competitive advantage.

An uncertain **market**

FRANCO MUSIARI, ASSODEL

The first quarter of the year ended with uncertainty but still reasonable results for Italian electronics, especially when compared with a difficult general economic situation.
This is what emerges from the last market report from **Assodel** (Electronic Districts Association - Italy) which, during the association meeting on May 19, organized for the first time in virtual mode, presented numbers and trends in the electronic components sector for the first months of the year.

POWER SEMICONDUCTORS BETTER THAN THE AVERAGE

According to Assodel data, semiconductors closed the first quarter of 2020 at just under € 230 million with a decrease of -4.5% on the first quarter of last year. The components for power electronics - MOSFET, IGBT, Diodes and Power IC - recorded the best performances, with a growth in countertrend of +5%. Although billings were poor, bookings registered a turnover ratio - book-to-bill - of 1.20.
This fact that did not surprise the President of Assodel, **Maurizio Maitti**, who commented: *"In the first months of the year, we all went out of our way to collect orders to avoid stock outs and supply problems during the relaunch phase, assuming that the virus problem would have remained limited to Asian productions. Subsequently, the generalized lockdown effectively rendered any previous forecast in vain and induced the market (customers in this case) to reposition itself, both in terms of production organization and supplies."*

SEMICONDUCTORS, BOOKING, BILLING & BOOK TO BILL

Source:Assoel

IP&E REMAIN STABLE

The Italian IP&E sector recorded a quarter-on-quarter growth in turnover of 35% which brought it to 109 million euros, a level that has not been seen for some time. But the Q1 2020 report was marked by a negative result vs Q1 2019: -2.9%.
Passive Book to Bill index was less positive than that of semiconductors and stood at 1.01.
The President also pointed out, in explanation of the marked difference compared to the assets, that: *"the situation of the IP&E, which has always been much less critical on deliveries, has not seen the need to push bookings."*

SYSTEMS ARE GROWING

Systems were the only sector to close with a positive trend index of +2.8% compared to the first quarter of 2019. Among the best, the wireless systems recorded +58%. Although positive in the trend, the systems reported a Book to Bill index below unity: 0.97.

THE MARKET IS UNPREDICTABLE, BUT THERE IS OPTIMISM FOR OUR FUTURE

It is the current quarter (Q2) that is raising concerns among Assodel members. Most participants reported that they had a booking, both in April and May, 40% lower than expected performance levels. This will have a significant impact on the performance of the second and third quarters. Maurizio Maitti confirmed: *"The Booking of Q2 will be affected by a strong contraction and only after the summer will we be able to witness a return to normal".*
No one reported massive cancellations or rescheduling. Even on payments, the credit group of the association reported no particularly negative impacts at present. But everyone is ready to *"listen to the needs of customers and find with them the solution to current problems".*

NEW DIGITAL SERVICE

Starting from the second half of the year, Assodel will make a new Tecno digital market observation service available to its members. This is a great novelty that will allow companies in the sector to access data in real time through a proprietary digital platform. Updates will continue to be on a quarterly basis, but members will be able to query the data at any time, in an interactive and filterable way by sector and product family.

Q1-2020 European Component Distribution declines further as Covid-19 kills the hopeful shoots

AUBREY DUNFORD, IDEA

The global economic slowdown has been completely overshadowed by the effects of the COVID-19 pandemic. Sales of Electronic Components through Distribution in Europe were affected as the virus disrupted the supply from China before the great European shut-down hit sales at the end of March.

Although the global economy was continuing to slow as we entered the first months of 2020 the effect of the COVID 19 outbreak has disrupted the global economy. The **European Electronic Components Distribution Market** declined as shown by the Q1 2020 European Electronic Components Statistics. Billings measured across Europe in Q1 2020 were **9.4%** lower than in the same quarter of 2019. In all countries the seasonal pattern is for the first quarter of the year to be higher than the last quarter of the previous year and in the first quarter overall the billings have been 16.1% higher than in Q4 2019. Although the real effect of the European shutdown came only in the last weeks of the quarter, there was already disruption in the supply chain as the effects of the lockdown in China were being felt. However, bookings were 26.8% higher than in the last quarter compared to the fourth quarter of 2019 and 2.5% higher than in the first quarter of 2019.

A more hopeful sign can be seen in *Graphic T1*. The book:bill ratio having been falling for 8 successive quarters improved in the last quarter of 2019 and that in the first quarter of 2020 has risen past unity to 1.05 – although this is based on low billings. With the continued slowing of the global economy the supply/demand had come back into balance and companies had adjusted their stock levels to lower levels and were starting to place orders more in line with demand and hence the improvement in the book:bill ratio. However, it is difficult to believe that the COVID-19 situation will not kill that hopeful sign in the second quarter of 2020, and we have to **expect dramatic downturn** in the market for at least the second quarter of 2020.

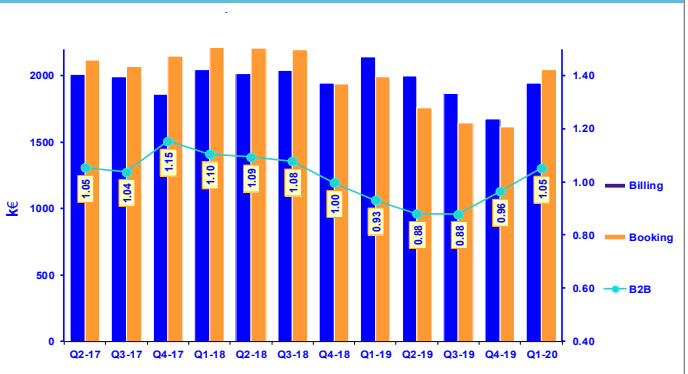
As indicated in the economic outlook below the effects of the virus

> "BILLINGS MEASURED ACROSS EUROPE IN Q1 2020 WERE 9.4% LOWER THAN IN Q1 2019„

are likely to be severe and it is difficult to predict any clear view on the market for the remainder of 2020. However the underlying

1ST QTR. 2020 TOTAL COMPONENTS BOOKING, BILLING & BOOK : BILL RATIO *Graphic T1*

Total distribution electronic components booking, billing and Book:bill ratio for Germany, France, Italy, UK, Sweden, Norway, Denmark, Finland, Switzerland and Austria



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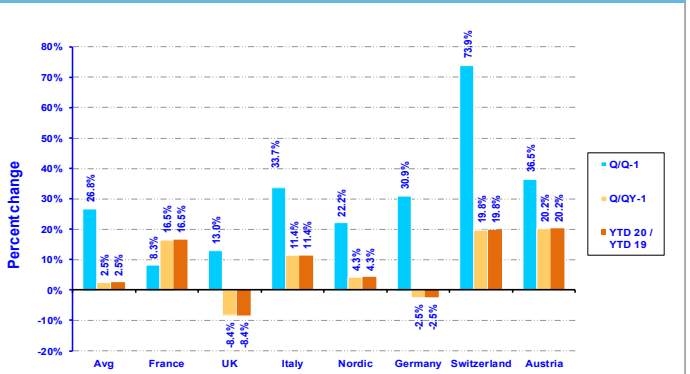
1ST QTR. 2020 TOTAL COMPONENTS BOOKING TREND *Graphic T2*

Distribution orders for Electronic components by country comparing current qtr with prior quarter (Q/Q1)and same quarter prior year (Q/QY-1) and YTD 18/17



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upturn in the electronics market will still happen but it might be 2021 before we can see that in the European Distribution Market and as **Adam Fletcher** has reminded us in his article that when the COVID-19 crisis is over trade issues will once again emerge.

THE ECONOMIC OUTLOOK: THE GREAT LOCKDOWN

According to the **International Monetary Fund's World Economic Outlook** published in April 2020 - *"The COVID-19 pandemic is inflicting high and rising human costs worldwide. Protecting lives and allowing health care systems to cope have required isolation, lockdowns, and widespread closures to slow the spread of the virus. The health crisis is therefore having a severe impact on economic activity. As a result of the pandemic, the global economy is projected to contract sharply by -3 percent in 2020, much worse than during the 2008-09 financial crisis. In a baseline scenario, which assumes that the pandemic fades in the second half of 2020 and containment efforts can be gradually unwound, the global economy is projected to grow by 5.8 percent in 2021 as economic activity normalizes, helped by policy support."*

*There is **extreme uncertainty around the global growth forecast**. The economic fallout depends on factors that interact in ways that are hard to predict, including the pathway of the pandemic, the intensity and efficacy of containment efforts, the extent of supply disruptions, the repercussions of the dramatic tightening in global financial market conditions, shifts in spending patterns, behavioural changes (such as people avoiding shopping malls and public transportation), confidence effects, and volatile commodity prices. Many countries face a multi-layered crisis comprising a health shock, domestic economic disruptions, plummeting external demand, capital flow reversals, and a collapse in commodity prices. Risks of a worse outcome predominate.*

> "THE HEALTH CRISIS IS THEREFORE HAVING A SEVERE IMPACT ON ECONOMIC ACTIVITY„

Effective policies are essential to forestall worse outcomes. Necessary measures to reduce contagion and protect lives will take a short-term toll on economic activity but should also be seen as an important investment in long-term human and economic health. The immediate priority is to contain the fallout from the COVID-19 outbreak, especially by increasing health care expenditures to strengthen the capacity and resources of the health care sector while adopting measures that reduce contagion. Economic policies will also need to cushion the impact of the decline in activity on people, firms, and the financial system; reduce persistent scarring effects from the unavoidable severe slowdown; and ensure that the economic recovery can begin quickly once the pandemic fades.
Because the economic fallout reflects particularly acute shocks in specific sectors, policymakers will need to implement substantial targeted fiscal, monetary, and financial market measures to support affected households and businesses. Such actions will help maintain economic relationships throughout the shutdown and are essential to enable activity to gradually normalize once the pandemic abates and containment measures are lifted.

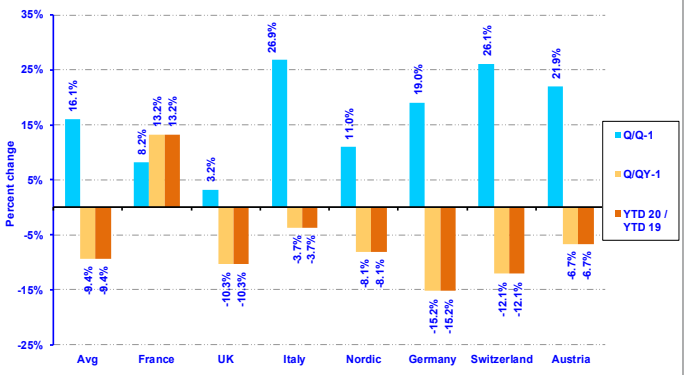
> "STRONG MULTILATERAL COOPERATION IS ESSENTIAL TO OVERCOME THE EFFECTS OF THE PANDEMIC„

The fiscal response in affected countries has been swift and sizable in many advanced economies (such as Australia, France, Germany, Italy, Japan, Spain, the United Kingdom, and the United States). Many emerging market and developing economies (such as China, Indonesia, and South Africa) have also begun providing or announcing significant fiscal support to heavily impacted sectors and workers. Fiscal measures will need to be scaled up if the stoppages to economic activity are persistent, or the pickup in activity as restrictions are lifted is too weak. Economies facing financing constraints to combat the pandemic and its effects may require external support. Broad-based fiscal stimulus can pre-empt a steeper decline in confidence, lift aggregate demand, and avert an even deeper downturn. But it would most likely be more effective once the outbreak fades and people are able to move about freely.

The significant actions of large central banks in recent weeks include monetary stimulus and liquidity facilities to reduce systemic stress. These actions have supported confidence and contribute to limiting the amplification of the shock, thus ensuring that the economy is better placed to recover. The synchronized actions can magnify their impact on individual economies and will also help generate the space for emerging market and developing economies to use monetary policy to respond to domestic cyclical conditions. Supervisors should also encourage banks to renegotiate loans to distressed households and firms while maintaining a transparent assessment of credit risk.
***Strong multilateral cooperation is essential** to overcome the effects of the pandemic, including to help financially constrained countries facing twin health and funding shocks, and for channelling aid to countries with weak health care systems. Countries urgently need to work together to slow the spread of the virus and to develop a vaccine and therapies to counter the disease. Until such medical interventions become available, no country is safe from the pandemic (including a recurrence after the initial wave subsides) as long as transmission occurs elsewhere".*

1ST QTR. 2020 TOTAL COMPONENTS BILLING TREND *Graphic T3*

Distribution sales for Electronic components by country comparing current qtr with prior quarter (Q/Q1)and same quarter prior year (Q/QY-1) and YTD 18/17



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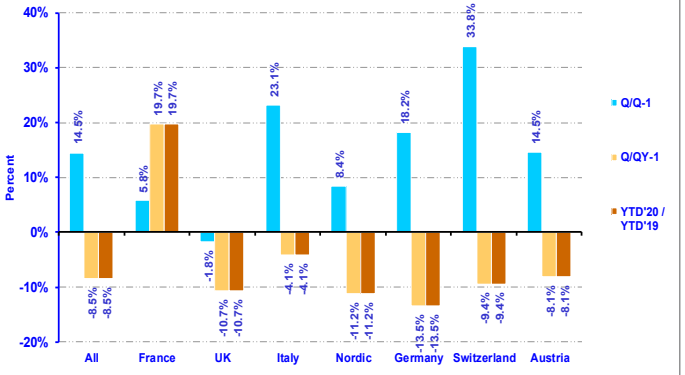
1ST QTR. 2020 SEMICONDUCTOR BILLING TREND *Graphic S3*

Distribution sales for semiconductors by country compared with the prior quarter (Q/Q1) and the same quarter prior year (Q/QY-1) and YTD 18/17



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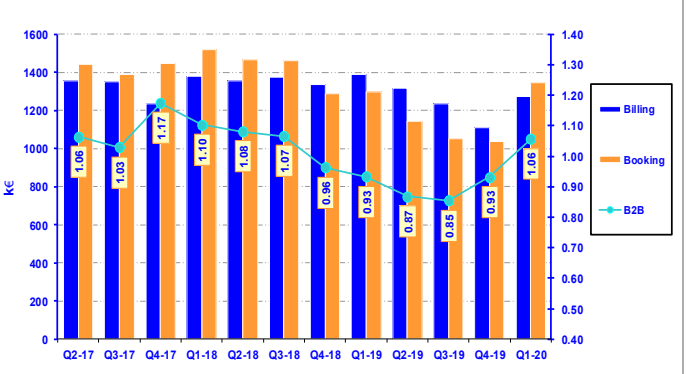
China's economy shrank in the first three months of 2020, its first contraction since 1992, as production and spending were frozen by the country's coronavirus lockdown. The National Bureau of Statistics reported on Friday that gross domestic product fell by 6.8% during the quarter. China hasn't reported a full year of contraction since the 1970s. The sharp contraction reflects the weakness in consumer spending and investor confidence while the novel coronavirus has flattened economies around the world. The economic data released in April showed that industrial production fell by 1.1% year-on-year, retail sales of consumer goods fell 19%, investment in fixed assets fell by 16.1%, and imports and exports were down by 6.4% - all worse than estimated. China was keen, however, to present positives, saying that overall national economic and social development in the first quarter was stable despite the outbreak of COVID-19. *"The result modestly is on the rosy side of what we believe actually happened in Q1,"* said **Miguel Chanco**, a senior Asia economist at Pantheon. *"But the official data were very close to the reality in the grand scheme of things, and that should be welcomed, despite the damning picture they paint,"* he said of China's statistics.

The **Japanese economy** shrank 0.9% on quarter in the three months to March 2020, entering a recession for the first time since 2015 and compared with market expectations of a 1.2 percent decline, a preliminary estimate showed, as the COVID-19 crisis took a huge toll on activity and demand. There were declines in both private consumption (-0.7% vs -2.9% in Q4) and capital expenditure (-0.5% vs -4.8%), while government spending rose the least in a year (0.1% vs 0.2%) and public investment dropped for the first time in five quarters (-0.4% vs 0.5%). In addition, net external demand subtracted 0.2% points from growth as exports fell more than imports.

The **U.S. economy** decreased at an annual rate of 4.8 percent in the first quarter of 2020, according to the *"advance"* estimate

1ST QTR. 2020 SEMICONDUCTOR BOOKINGS, BILLINGS & BOOK:BILL RATIO *Graphic S1*

Semiconductor components bookings, billings & book:bill ratio for Germany, France, Italy, UK, Sweden, Norway, Denmark, Finland, Switzerland and Austria



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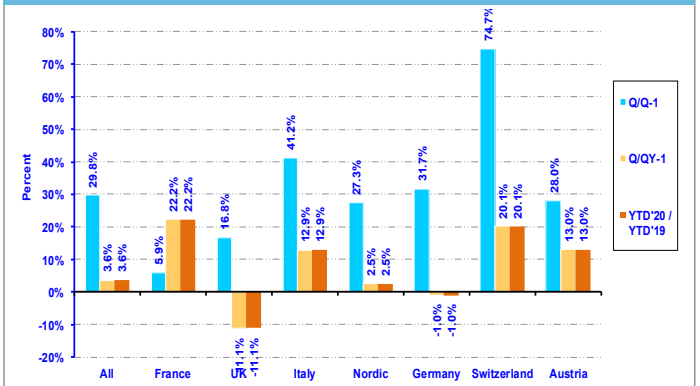
1ST QTR. 2020 SEMICONDUCTOR BOOKING TREND *Graphic S2*

Distribution orders for semiconductors by country comparing with the prior qurter (Q/Q-1) and same qtr prior year (Q/QY-1) and YTD 19/18



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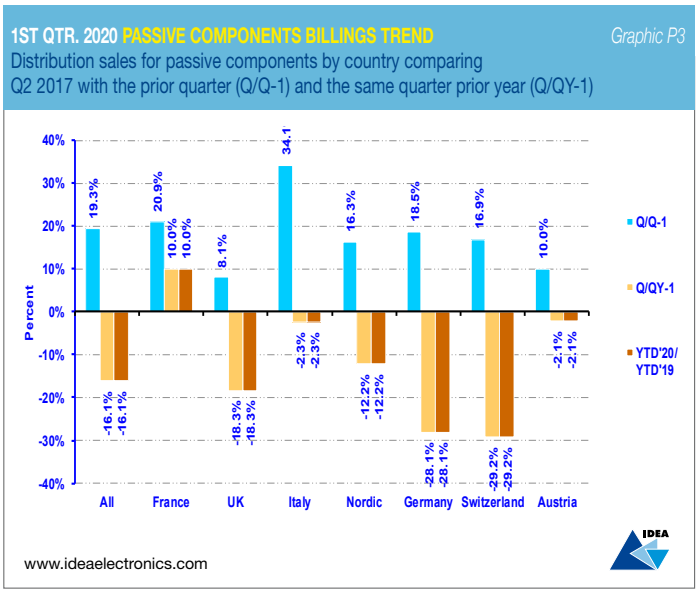

released by the **Bureau of Economic Analysis**. In the fourth quarter of 2019, real GDP increased 2.1 percent. This marked the first negative GDP reading since the 1.1% decline in the first quarter of 2014 and the lowest level since the 8.4% plunge in Q4 of 2008 during the worst of the financial crisis. *"The upshot is this was already an economic catastrophe within two weeks of the lockdowns going into effect,"* said **Paul Ashworth**, chief U.S. economist at Capital Economics. *"The second quarter will be far worse."*

"SEMICONDUCTOR SALES IN Q1 2020 WERE 8.5% DOWN COMPARED WITH Q1 2019„

The **Eurozone economy** contracted sharply in the first quarter of this year, after marginally expanding in Q4 2019. GDP dived a seasonally-adjusted 3.8% in Q1 from the previous quarter, contrasting Q4's 0.1% uptick and thus logging the sharpest contraction since the series began in 1995, according to a preliminary estimate released by **Eurostat**.

Compared with the same quarter of the previous year, seasonally-adjusted GDP plunged 3.3% in Q1, swinging from Q4's 1.0% increase and marking the worst reading since the third quarter of 2009. The contraction in the Eurozone economy came on the back of frozen business and household activity in the last two weeks of March due to measures adopted by governments to contain the pandemic. Data from national statistical institutes showed that France's economy shrank 5.8% over the previous quarter, while Spain's economy contracted 5.2% and Italy's already-ailing economy tumbled 4.7% in quarter-on-quarter terms. Meanwhile, softer but still significant contractions were recorded in Belgium and Austria. Looking ahead, economic activity is set to be hammered this year as the pandemic disrupts supply chains, hits tourist flows and dampens both domestic and external demand.

The UK's gross domestic product shrank by 2.0% on quarter in the first three months of 2020, after showing no growth in the previous period and compared to market expectations of a 2.5 percent slump, a preliminary estimate showed. That was the steepest contraction since the fourth quarter of 2008 as a coronavirus lockdown from mid-March forced businesses to close and consumers to stay at home.

Looking at the data from the Q1 2020 European Electronic Components Statistics we can see:

MARKET DECLINE CONTINUES

As can be seen in *Graphic T3* there has been decline in billings (sales) Q1 2020 over Q1 2019 in all countries except France that means that for Europe as a whole the market has declined by 9.4%. Europe's largest market, Germany, declined by 15.2%.

The figures shown in *Graphic T2* show that bookings in Q1 2020 were overall 2.5% higher than Q1 2019. There was growth in all countries except the UK and Germany.

The largest decline in bookings in Q4 2019 was in Switzerland but this seems to have corrected by a huge increase in bookings in Q1 2020.

QUARTERLY SALES BY PRODUCT FAMILY

As we do each quarter, we look at the booking and billing trends by product and regional market.

Semiconductors

the book:bill ratio for semiconductors as shown in *Graphic S1* shows the same pattern as for the total components with 7 quarters with the ratio declining but then increasing in the fourth quarter of 2019 and the first quarter of 2020 passing back into positive at 1.06. This picture within the semiconductor market in Europe continues to be consistent with figures from other sources showing the slowdown in the global market but suggests that an upturn is about to happen.

As can be seen in *Graphic S3* Billings in Q1 2020 were 14.5% higher than in Q4 2019 but 8.5% down compared with Q1 2019. The steepest decline was in Germany at -13.5%. As with the total components all countries showed higher billings in Q1 2020 compared to Q4 2019 although the biggest increase was in Switzerland although this appears to be a correction as it follows a large decrease in the last quarter.

As semiconductors are the largest category as usual the bookings pattern is the same as for total components.

Passives

In the Passives Sector the book:bill ratio having been positive for nine consecutive quarters, dropped to 0.86 and 0.85 in the first three quarters of 2019 but then rebounded nearly to unity in the

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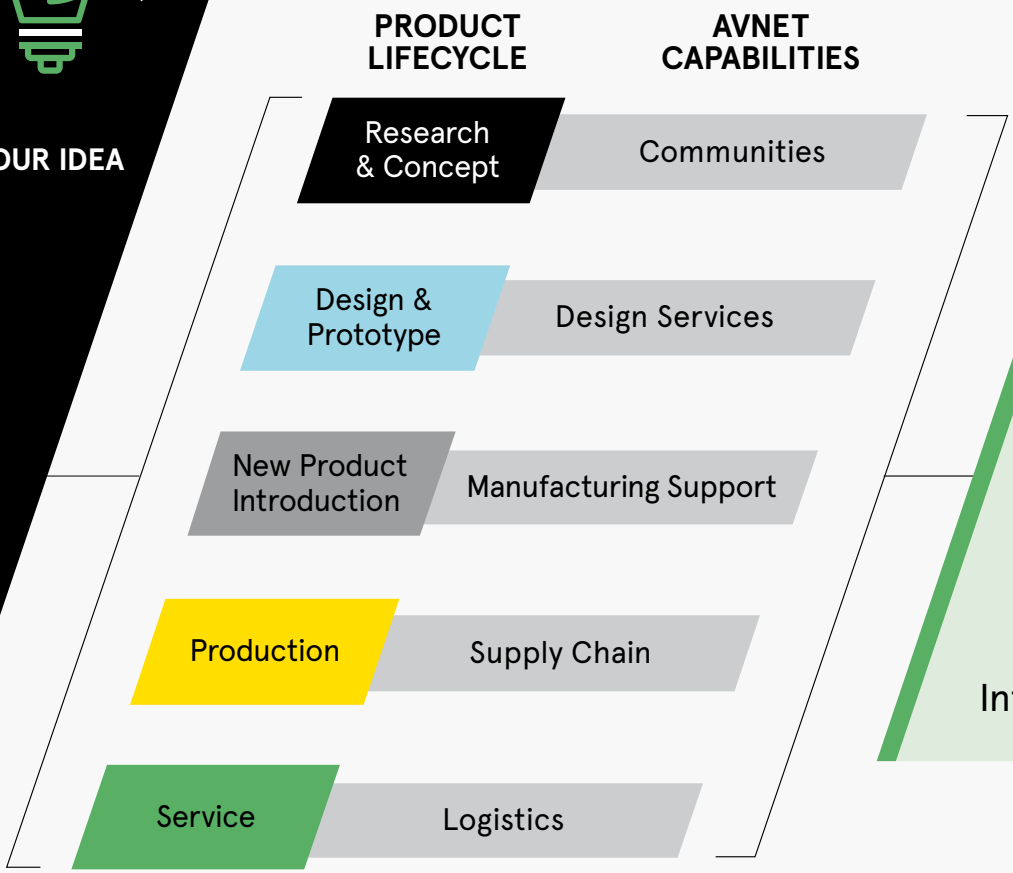

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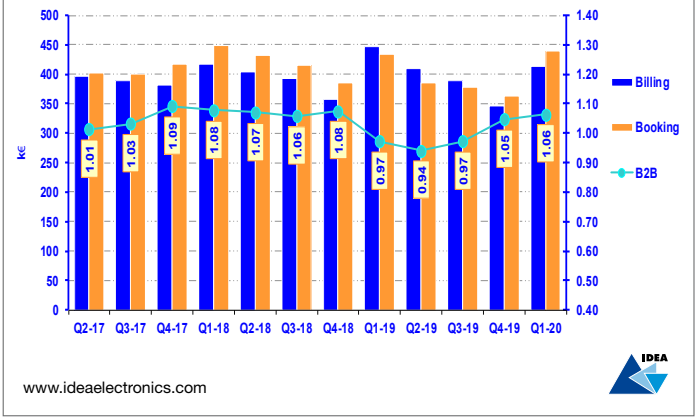
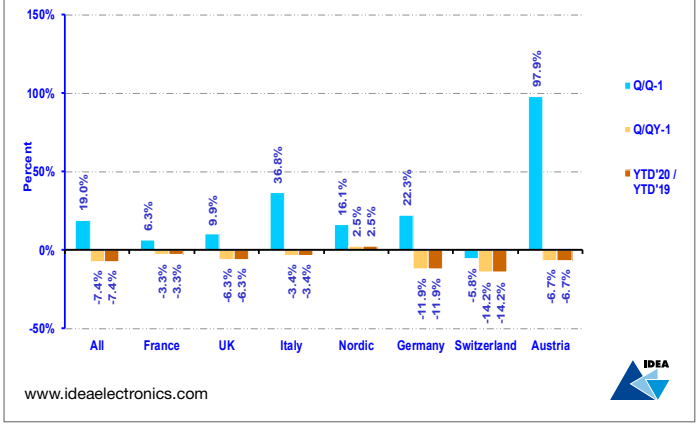
1ST QTR. 2020 EMECH COMPONENTS BOOKING, BILLING & BOOK:BILL RATIO *Graphic E1*

EMECH components Bookings, billings & book:bill ratio for Germany, France, Italy, UK, Sweden, Norway, Denmark, Finland, Switzerland and Austria



1ST QTR. 2020 EMECH COMPONENTS BILLINGS TREND *Graphic E3*

Distribution sales of emech components comparing current qtr with prior qtr (Q/Q-1) and same qtr prior year (Q/QY-1) plus YTD trend



last quarter of 2019 but improved slightly in Q1 2020 passing back past unity to 1.01.

As can be seen from *Graphic P3* passives is showing the same general picture as semiconductors with sales in Q1 2020, 19.3% higher than in Q4 2019 and 16.1% lower compared to Q1 2019. Again, there is a consistent picture across the European countries with the exception of France where there has been 10% growth compared to Q1 2019.

As *Graphic P2* shows in this quarter there has been a stronger performance in bookings hence the rise in the book:bill ratio. Bookings overall in Q1 2020 were 22.1% higher than in the fourth quarter of 2019 but 1% lower than the first quarter of 2019. This picture was fairly consistent across all countries with the exception of Austria where there were very strong bookings.

E-Mech and Other Components

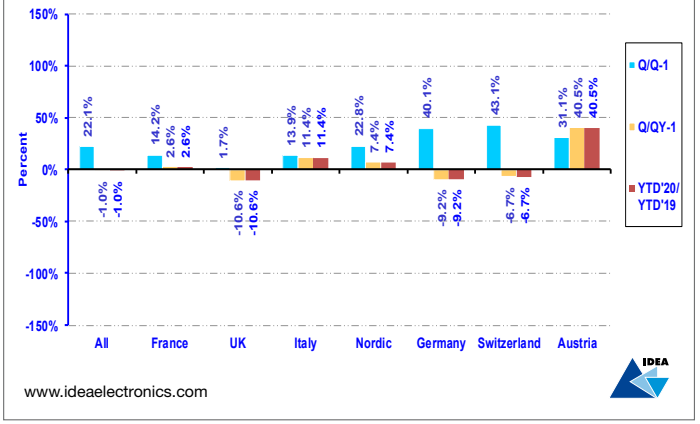
As can be seen from the *graphic E1* the trend for the book:bill ratio is slightly different from the other two product categories. The ratio has been more stable. Although there was a decline in the first quarter of 2019 the ratio was only just below unity at 0.97 and dropping to 0.94 for both the second and third quarters and then has gone back past unity to 1.05 in the last quarter of 2019 and rising slightly further to 1.06 in Q 2020 thus confirming the much more stable nature of this sector compared to semiconductors.

> "IN Q2 2020 WE HAVE TO EXPECT DRAMATIC DOWNTURN„

Graphic E3 shows that overall, there was a rise of 19% in billings in the first quarter of 2020 over the last quarter of 2019 with all countries except Switzerland showing increase. Compared to the first quarter of 2019 there was a 7.4% decline in the market. Bookings increased overall by 21% compared to Q4 2019 and increased by 1.4% compared to Q1 2019.

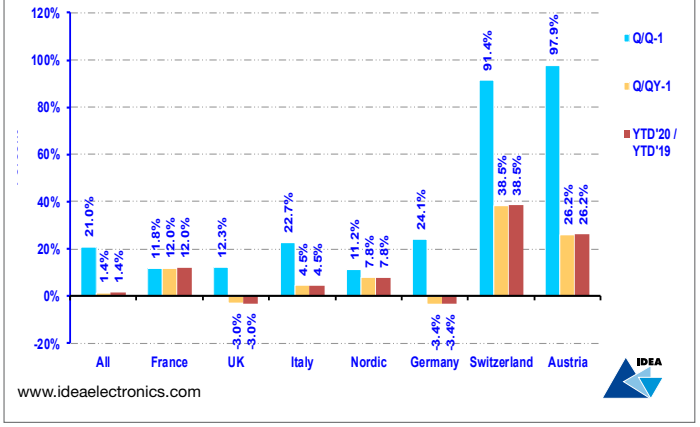
1ST QTR. 2020 PASSIVE COMPONENTS BOOKING TREND *Graphic P2*

Distribution orders for passive components by country comparing Q2 2017 with the prior quarter (Q/Q-1) and the same quarter prior year (Q/QY-1)



1ST QTR. 2020 EMECH COMPONENTS BOOKING TREND *Graphic E2*

Distribution orders for passive components by country comparing Q3 2019 with the prior quarter (Q/Q-1) and same qtr prior year (Q/QY-1)



Corona crisis slows down business development in German components Distribution

GEORG STEINBERGER, DMASS & IDEA

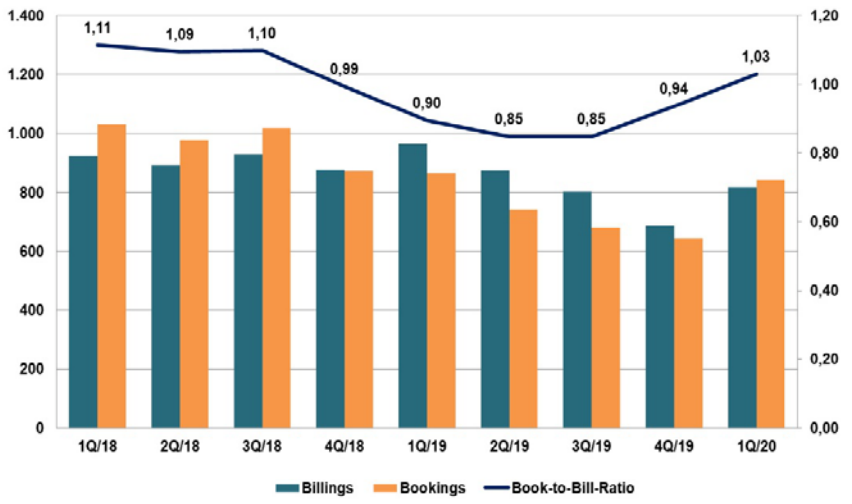
German distribution of electronic components (according to FBDi e.V.) continues to decline in the first quarter of 2020. Order situation improves slightly, at a low level.
FBDi calls for future-oriented course-setting and investments in infrastructure.

The market for electronic components in Germany cannot expect any short-term prospect of improvement, especially as the corona crisis is currently causing considerable uncertainty. This also applies to distribution. Sales of the distribution companies organised in the Fachverband Bauelemente-Distribution (FBDi e.V.) **fell by 15% to EUR 818 million**. While this represents a sequential improvement over the fourth quarter of 2019, it remains considerably below Q1/2019. In comparison, orders fell by "only" 2%, which achieves a noticeable improvement in the book-to-bill rate to 1.03, albeit at a low level.

"NOW THE EUROPEAN AND AMERICAN INDUSTRY ARE CHALLENGED FOR RECOVERY"

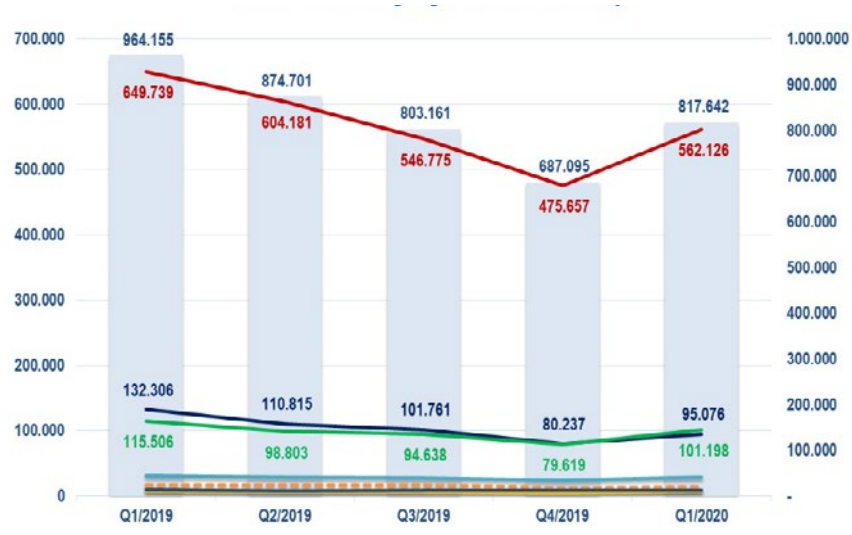
However, there were differences between the product groups: semiconductors, sensors, electromechanics and power supplies were affected below average, but passive components, displays and assemblies in particular suffered losses, some of them significant.

ELECTRONIC COMPONENTS MARKET GERMANY in million euro — Figure 1



Source: FBDi e V. - May 2020

FBDI GERMANY BY PRODUCT GROUP — Figure 2



Source: FBDi e V. - May 2020

Semiconductor sales shrank by 13.2% to 562 million euros, passive components by 28% to 95 million euros, and electromechanics by 12.4% to 101 million euros.

"POLITICIANS HAVE TO RETHINK THEIR WAY OF CATERING ONLY TO STRONGEST LOBBIES"

Sensors (excluding semiconductor sensors) remained almost stable at -0.3%, **power supplies** at -9.2% at least in single digits. **Display** sales fell by 15.1%, **assemblies & tools** by 17.7%. This results in a slight shift in market weight: **semiconductors** fall to 69% share of the total market, **passives** to 11.6%, electromechanics rise to 12.4% (overtaking passives for the first time) and power supplies to 3.5%, the highest value since the 2003 survey. All other product groups together account for 3.7%.

FBDi Chairman **Georg Steinberger**: *"While in February we were still concerned with the question of how COVID-19 will influence production in China and what possible bottlenecks this might cause in the supply chain, now* - at least as virus-affected - *the European and American industry are challenged for recovery. As a result of the partial plant closures in Europe and the USA the overview in the supply chain is rather lost - who needs what when is probably not clear until autumn 2020. The presumed bottlenecks will most likely come later, but then with more force."*

"IN LONG TERM, OUR INDUSTRY WILL PLAY A KEY ROLE IN THE TECHNICAL AND ECO-FRIENDLY RENEWAL OF SOCIETY"

Since February the mood in Europe and the USA has deteriorated massively, says Steinberger: *"A PMI (Production & Manufacturing Index from IHS Markit) of 34.5 in May (50 is the threshold to positive) speaks volumes - the economic crisis squared. However, for the time being only in the mood, the year will show how bad it really gets. Basically, we still believe that in the long term our industry will play a key role in the technical and eco-friendly renewal of society".*

The COVID-19 crisis would have the potential to show the entire society, and thus the economy, the way to a more sustainable future, believes Steinberger: *"What Corona has shown? We can not only wear masks and keep our distance, but we can also operate digitally! This decade will show whether we can make the transition to a more conscious, economically sensible, environmentally compatible and fairer way of doing business. Politics have to rethink their way of catering only to strongest lobbies and to invest in infrastructure that will take us to the next level of digital society. 15 years of public inertia are enough!"*

News from Germany

FBDI

New Guideline of FBDi on "Product Analyses and 8D-Report"

The **FBDi** *(Fachverband Bauelemente Distribution e.V.)* presents a new guideline on the subject of **'Product Analyses and 8D-Report'**. The trigger for the development of the guide is that in almost 80% of the complaints about electronic components with requested product analyses or 8D-Reports no fault can be found by the manufacturer. In order to increase quality and throughput speed and to enable realistic assessments, the FBDi Competence Team Quality developed the qualified action guide, which is now available for download in German and English on the FBDi website.

(https://www.fbdi.de/wissen-teilen.html)

"IN ALMOST 80% OF THE COMPLAINTS ABOUT ELECTRONIC COMPONENTS, NO FAULT CAN BE FOUND"

In this way, FBDi promotes clean communication between all parties involved and underlines its role as a distribution platform for comprehensive exchange in the supply chain.
The practical guide defines the prerequisites on all sides for a meaningful implementation of product analyses and 8D-reports at manufacturers across distribution.
The clear definition of the necessary steps to be taken on all sides in the event of complaints is intended to ensure an optimal process through a uniform, clearly understandable procedure for all parties involved. The measures contained also support an improved workflow and the definition of responsibilities in product analyses. Misunderstandings and false expectations can thus be avoided, because the more qualified the application for a product analysis is, the higher the chance of a meaningful and comprehensive error analysis up to an 8D report.

Know the value of your Distributor

GEORG STEINBERGER, DMASS & IDEA

Let's leave for the moment Covid-19 implications on the electronics supply chain to the fortune tellers and touch a more fundamental topic: the value of your distributor to you (see headline).

Sometimes it feels (at least on the distribution side) that **distribution as a service** is not nearly valued as high as the market size or critical mass of distributors would suggest. One of the reasons might be that distributors seem to be willing to do everything at any cost (which is certainly not true). Another one maybe is that you regard distributors as necessary evil between you and the supplier (which is not true either, or distributors would not exist). A third one could be that your own targets are purely price related and you don't care about your cost of ownership like your CFO does.

Maybe it would we worthwhile looking at what your pain points are to determine what value distribution can have for you - besides providing access to the latest technology, technical support and additional product related services that suppliers cannot give.

"WHAT IS ONE OF THE BIGGEST FINANCIAL RISKS"

From your supply chain perspective, what is the single most important reason to use a distributor?
I rephrase the question: What is one of your biggest financial risks? How about ***"your cash not working as it should"***? Cash goes into your working capital as inventory and invoices to pay.

How do you ensure that you manage your inventory across 100s of manufacturers and 10s of thousands of different products?
How do you ensure to get the best payments terms from all of these suppliers so that you are not using up your cash before your own customer has paid you? Provided suppliers deal with you directly.

Another question you could ask yourself is:
wow, this business is the Wild West, no standards, clear information, no security in supply - how can I manage through that without getting my fingers burnt or without getting lost in a cacophony of information or data? How can I get more efficiency into my supply chain, when the rollercoaster rails end in mid-air sometimes?

The answer to all this is: you cannot do it without the help of experienced supply chain aggregators and sophisticated service providers called ***"distributors".*** Whether it is payment terms, complex logistics programs, flexibility in challenging situations, information technology (EDI), forecasting, market intelligence, traceability standards – all these greatly reduce your stock liability, financial burdens, commercial and legal risks – the combined cost of ownership impact or efficiency improvements vastly exceeds the pure price of material you purchase.

This is no new revelation – I heard it first as a young editor back in the early 90s. The concept back then was that the cost of a product is only 10% of the total cost of ownership that it causes. Even if its 1/3, the impact of proper supply chain management and the expertise to help optimise it, is much bigger. Any improvement here would dwarf the nit-picking on prices and really determines the value of professional distribution.

Having a material positive impact on your supply chain in *"fair weather"*, you can imagine the value in crises like Covid-19 or its unknown aftermath. With an almost complete loss of visibility in the entire supply chain, only mutual understanding, flexibility – ever heard of breathing contracts? – and a sense of solidarity will ensure that all critical partners can survive, or in more positive terms, can get back to a profitable growth trajectory.

The evolution of cellular communication technology: 3G to 5G

RON BISHOP, BISHOP & ASS.

In the past two decades, we've not only cut the cord between our phones and the wall, but we have gained the ability to stream video, play games, and access the web from what has essentially become a powerful hand-held computer. 5G will push those capabilities to the next level.

Since the late 1970s, the ability to communicate with others using a device that is untethered to a wire has changed the way people interact, whether they are located across the street or in another country. Prior to the introduction of cellular technology, ham shortwave and FM radios provided two-way communication to those willing to learn Morse code and obtain a license. Citizens band (CB) radios offered up to 20-mile links and became wildly popular with the mass market in the early to mid-1960s.

However, weather conditions and time of day had a major influence on reliability of ham radio links, while transmission power limits and chatty enthusiasts reduced the usefulness of CB.

> "5G WILL PUSH THOSE CAPABILITIES TO THE NEXT LEVEL,,

The industry needed a system that consumed little energy to enable small portable devices to operate on battery power. Cellular phones evolved to meet this need. Rather than adopt a

point-to-point long-distance strategy, cellular phones link to a grid of local relay base stations. A cellular phone located anywhere in the grid links to the closest tower, which is connected to a mobile switching center to complete the call to the target device within that or any other cell or a stationary phone on the public network.

Cell sites have the unique ability to seamlessly hand off a call originating from a moving vehicle to an adjacent cell.
A progression of enhanced technical standards enabled compatibility among devices and opened the door to development of a rapidly expanding market. Efficient network management was the other key to development of advanced cellular communication systems in terms of speed, reliability, latency, capacity, and additional features.

"THE CONNECTOR INDUSTRY IS POISED TO MAKE MAJOR CONTRIBUTIONS TO 5G INFRASTRUCTURE"

The first generation of mobile networks, dubbed 1G, was introduced in Japan in 1979. It offered analog 2.4Kb/s with limited coverage and no roaming support. In 1991, 2G employed digital signaling to bump the speed to 64Kb/s and used the **Global System for Mobile Communications (GSM)** standard for improved voice fidelity and reliability. It also ushered in the ability to send text messages and photos. 3G was introduced in 2001 and harmonized global standards, along with 256Kb/s speed. Additional functions included video conferencing, streaming, and **Voice over Internet Protocol (VoIP)**. The fourth and most common generation in use today, called **Long-Term Evolution (LTE)**, can deliver speeds to 1Gb/s for high-definition video, web access, and gaming applications.

5G IS THE NEXT FRONTEER

We are now on the cusp of Gen 5, which is designed to support the escalating demands of a universe of Internet of Things (IoT), explosion of consumer video, telemedicine, telework, and future autonomous transportation. In addition to a 10 to as much as 100 times increase in speed, latency will be dramatically reduced. The ability to support many more connected devices with greater network efficiency and reduced latency is driving the transition to 5G.
Broad market adoption of 5G service will likely upend mobile cellular as well as fixed broadband markets. With speeds approaching those offered by cable and even fiber-to-the-home services, 5G has the potential to change the way consumers access the Internet, disrupting established cable and DSL providers.

System engineers had to entirely rethink the architecture and technology of 5G cellular communication systems and deal with three different versions of 5G. To increase speed and system capacity, designers chose to utilize multiple higher-frequency bands, including millimeter wave (mmWave) frequencies of up to 52.6GHz. The higher the frequency, the greater the signal distortion, due to attenuation over distance and through obstructions. Even heavy rain can reduce the effective range of mmWave transmission. In order to compensate for these losses, 5G cellular networks will require a major increase in the number of cellular antennas. Another part of the solution is the use of **massive multiple-input multiple-output (massive MIMO).**

Technology enabled by base stations outfitted with up to 100 active antennas utilizing beamforming technology that can establish point-to-point links to individual devices.
The race to claim leadership in **5G technology** has become a political issue between the US, China, South Korea, and Japan. Countries that are first to implement 5G networks may get a head start in developing critical applications, including artificial intelligence, autonomous transportation, virtual reality, real-time healthcare, and Industry 4.0 manufacturing technology. The jobs and revenue these applications generate will have a long-term impact on the economic health of nations for years to come.

The connector industry is poised to make major contributions to 5G infrastructure. Coaxial connectors and cable assemblies will play a major role in antenna-to-base station equipment. Long-distance fiber optic links will provide the most cost-effective connections from base stations to the network. Several connector manufacturers have expanded their antenna offerings to include 5G antennas.
Once 5G services are widely available in large metro areas, demand for 5G- compatible smartphones will accelerate.
These advanced phones will utilize subminiature RF, stacking, and flat-flex cable connectors.

Qualcomm estimates that 450 million smartphones will ship in 2021 and 750 million in 2022. Broad adoption of 5G will unleash entirely new categories of connected devices, all of which will utilize a wide variety of connectors.
The unique requirements of 5G networks have already spawned new connectors designed to address specific applications. The ERFV board-to-board coax connector system from **TE Connectivity** utilizes a unique spring-loaded pin, which makes reliable contact to a gold-plated pad on the surface of the opposite PCB. The rated frequency range is DC to 10GHz.

The COVID-19 pandemic may temporarily slow the proliferation of 5G networks, but the momentum of this revolutionary technology will drive the next chapter in mobile connectivity.

Distributor sales drop slightly in 2019

but optimism continues

AUBREY DUNFORD, IDEA

In a report commissioned by Electronics Sourcing North America, **Aubrey Dunford** (Managing Partner, Europartners Consultants) look at what happened in the **North American Distribution Market in 2019**. (The data in this report was collected at the end of March 2020 just as the COVID-19 outbreak was starting in the USA)

The North American (NA) distribution industry declined a little in 2019. After an 8 percent growth in 2017, and 9.8 percent growth in 2018, in 2019 there was a fallback of 3.3 percent. Our figures therefore show that the sales of the top distributors fell from $31.4 billion in 2018 to $30.2 billion in 2019. We estimate that the franchised distribution market fell from $30 billion to $29 billion.

Based upon our survey we estimate that the total sales through distributors of Semiconductors by Distributors in North America was £16.9 billion whilst sales of Passive and Electromechanical Products was under $5.8 billion. Sales of Interconnect Products was $4.2 billion. Sales of Computer Products are becoming less important to the top distributors as this business moves away into other channels and we estimate that the sales through component distributors was $1.6 billion although over $1 billion of this was through the Enterprise Computing Solutions division of Arrow.

Although the market may have shown decline in 2019, the executives we interviewed were all stressing that 2019 had been a year in which their companies had invested. Many had invested in new warehouse facilities and were looking to expansion. This investment and expansion was not just limited to the US as US based distributors are continuing to grow their global presence.

2019 THE MARKET TAKES A BREATH AND PREPARES TO MOVE ON

It is now about 50 years since the first organizations to represent companies working in the electronic component distribution channel and market data started to be collected and published. Looking back over the years it is clear that throughout that time the value of the component market on an annual basis has had dramatic ups and downs. This is particularly true of the semiconductor components sector. One of the fundamental characteristics of the components market is that the longest and most capital-intensive production processes are at the start of the supply chain. Most electronic components to be made at all and certainly cost effectively are made in batches where quantities far exceed the requirements of all but the very largest

> "THE NORTH AMERICAN (NA) DISTRIBUTION INDUSTRY DECLINED A LITTLE IN 2019„

customers. Hence the need for component distributors who can procure from the manufacture and supply to the majority of the market is fundamental to the electronic component supply chain. However despite the efforts to improve the communication along the supply chain often the market demands remain disconnected

TOP TEN SEMICONDUCTOR SALES Table 1

Company	Rank 2019	2019 North American Sales ($ millions)	% of Total Sales	Active Component Sales
Arrow	1	11.511	72	8288
Avnet	2	4.966	77	3824
Digi-Key	4	1.765	41	724
Mouser	7	879	44	387
Fusion Worldwide	10	347	73	253
RFMW	20	85	60	51
Symmetry Electr. Corp	24	50	98	49
NewPower Worldwide	14	190	22	42
Falcon Electronics Inc	27	38	96	36
CDI	26	38	75	29

Source: Electronic Sourcing NA

from the very large capital expenditure decisions that need to be made to keep the supply chain in balance.
Hence the dramatic ups and downs as the supply chain constantly stocks and destocks. Globalization of the markets has tended to exaggerate rather than relieve this issue.
After a decline in 2016, 2017 and 2018 brought rapid growth to the global markets and to the revenue of the top distributors in North America. 2019 was a year of consolidation as once again companies tried to bring the supply chain back to some form of balance.
Sales of **Semiconductors** (Active Components) accounted for 56 percent of the total NA Distribution Sales which is slightly less than the figure measured last year. Sales of semiconductors through the top distributors decreased from $14 billion to $13.7 billion a decrease of 2 percent. According to **World Semiconductor Trade Statistics (WSTS)** forecast issued in November 2019 the total growth in semiconductors sales in the Americas was expected to decline by over 25%. The biggest decline was in the memory sector where there has been price erosion. This is one of the product groups within semiconductors that is not so highly served by distributors.

Passive and Electromechanical Product sales accounted for about 20 percent of the total sales. The total sales of the companies who take part in the survey decreased from $5.9 billion in 2018 to $4.7 billion in 2019 an decrease of over 20 percent and takes the market back to the level it was in 2017. There can be little doubt that with the supply constraints that there were in 2018 around many passive products that sales price increase contributed to the market growth, and in 2019 with the easing of the constraints that prices decreased and that combined with too much inventory in the supply chain produced a double whammy that has brought the level back.
Analysis of the sales growth in 2018 showed that companies with no sales of passive components grew on average by 10 percent whereas companies with sales consisting of 30 percent of passive products grew by around 16 percent. The same analysis on the 2019 data shows that this trend has been reversed.
Interconnect Products made up 14 percent of the top distributors sales in 2019, up from 10 percent in 2018. This brought the sales in 2019 to $3.4 billion. According to data published by Bishops & Associates total sales of **Connectors** in North America was the same in 2019 as it was in 2018.

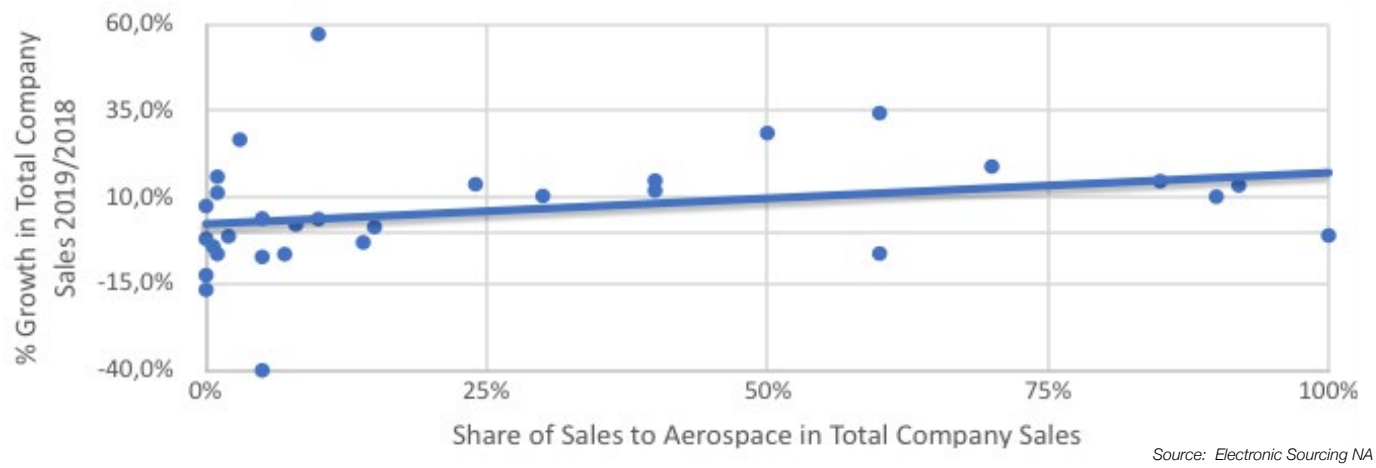
„COMPANIES WITH A HIGHER SHARE OF THEIR BUSINESS IN THE AEROSPACE SECTOR GREW FASTER IN 2019"

Computer Products continue to be less important to the top distributors of electronic components. There are many distributors for computer products who do not hold franchises for electronic components and therefore do not appear in our survey. Only 14 companies reported sales of computer products and these totaled $1.3 billion in 2018 down by 10 percent from $1.46 billion in 2018. Overall, this segment accounts for 6% of the total sales in 2018 unchanged from 2018.
Many large companies who had significant sales in this product area have withdrawn from this market segment, for example Avnet who sold its Technology Solutions business in 2016. Arrow remain in this business and dominate these sales figures accounting for over 75% of the sales.
As with Computer Products as mentioned above, many of the authorized distributors for electronic components are increasingly concentrating on the sales of components and thus sales of other products are becoming less significant with only 22 companies reporting sales in this category. Other components cover a broad range of products including batteries, power products, thermal products, filters and test and measurement products. Overall the reported sales were $1.1 billion. This figure will include in large part unfranchised product lines.

Overall, the North American Distribution Market 2019 saw **a small contraction of 3.3 percent** which after the rapid growth in the previous two years means that the overall trend is for the market to grow.

COMPANIES IN AEROSPACE SECTOR SHOW HIGHER GROWTH IN 2019

Figure 1



Source: Electronic Sourcing NA

Of the 40 companies who provided sales turnover for our survey, the average growth was 4.4%. The average sales growth in the 20 largest respondents was 0.4% whereas in the smaller 20 respondents the average sales growth was 3.9% confirming that in 2019 the smaller distributors did not lose the gains made in 2018. In total 21 companies reported sales growth with 13 companies reporting a double-digit growth.

Within the top 10, three companies **TTI, Mouser** and **Allied** reported growth at 1.4 percent, 2.1 percent and 3.3 percent respectively. DAC/Heilind sales were flat. The largest decline reported in the top ten was Digi Key with a fall of 7 percent. The two top distributors also dropped back with **Arrow** reporting a 5.3 percent decrease whilst **Avnet** posted a decline of 4.3 percent.
Our survey shows that 66 percent of the sales of the distributors that provided the information, goes to OEM companies, with 30 percent going to EMS/ODM companies. The remaining 4 percent of sales goes to other companies in many cases other distributors.
Looking at the market segments shows that Industrial remains the largest segment with over 26 percent of sales by distributor companies, down from 28 percent in 2019. **Aerospace/military** accounts for 20 percent of distributor sales in 2019. The percentage share in 2019 in the other segments were (2018 shown in brackets): **Automotive** 8 (11), **Computers and Peripherals** 9.5 (4), **Energy** 6.8% (3), **Medical** 6.3 (6), **Telecommunications** 7.4 (6) and other segments 12.4 (12).

Analysis from our survey shows that companies with a higher share of their business in the Aerospace sector grew faster in 2019.
As can be seen from the graphic companies with a higher percentage of their sales into the Aerospace sector showed higher growth in 2019.

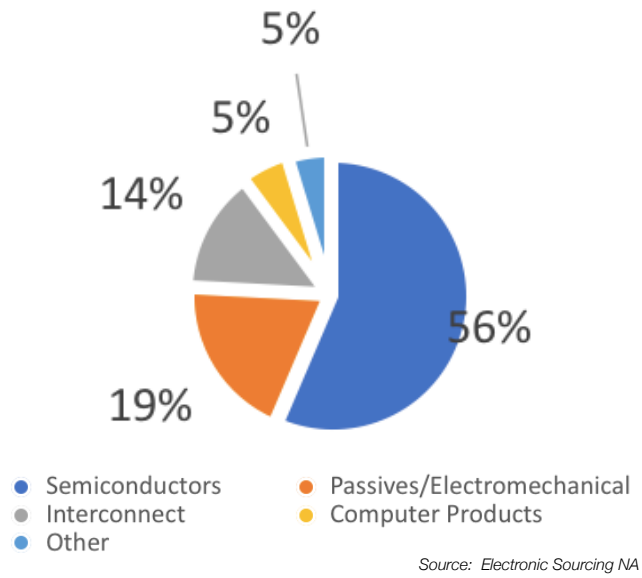
2020 THE YEAR OF THE OPPORTUNITY AND UNCERTAINTY

We conducted our survey and interviews at the end of March and at the start of April just as the Covid 19 pandemic was starting in the US. So the effect that the outbreak would have on the distribution industry in 2020 was at the forefront of everyone's thinking.

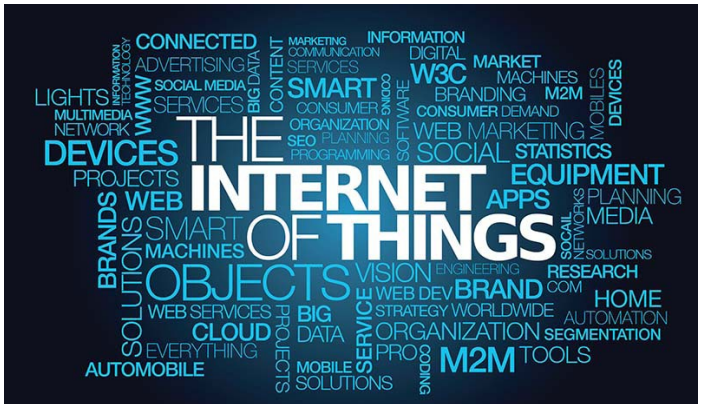
Looking to the future in our survey 21 cited Value-Added sales as one of the key drivers that distributors believe will deliver growth in 2020. However, 32 companies indicated that growth will come from new products and 27 gave new markets as a growth driver. Only 5 indicated acquisitions as bringing growth in 2020.

% OF NA REVENUE OF TOP DISTRIBUTORS 2019

Figure 2



Source: Electronic Sourcing NA



The **'Internet of Things' (IOT)** continues to be the emerging market that is most cited in our survey as a new area that will bring growth in 2020 with Artificial Intelligence increasingly cited. with new lighting applications, smart metering and Self Driving also scoring well. As in previous years renewable energy areas such as Solar and Wind were rated lower than they have been in the past.
In our interviews the one subject that was mentioned by every company was the roll-out of **5G**. Although 5G handsets may not be manufactured in the US most distributors are looking to the infrastructure that it will need and the effect it will have to provide growth opportunities.

Of the 41 distributors who responded to our survey by supplying sales turnover for North America, 34 also supplied their global turnover. On a comparable basis the global sales of these distributors had increased by 1.3% from 2018 to 2019, which although much lower than the 13.5% growth we recorded between 2018 and 2017 was still a positive growth. Global sales of these companies totaled $61.9 billion in 2019. For these distributors the North America sales accounted for 41% of their total turnover. Some companies also reported their sales in Asia and for these companies, sales in Asia had decreased overall by 1.3 percent, and their sales into Europe, Middle East and Africa where sales measured in US dollars had decreased by 6 percent. However, care must be taken with these numbers as the change in the value of the US dollar between 2018 and 2017 must also be considered.

IDEA NEWSLETTER
INTERNATIONAL DISTRIBUTION
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News from France

The **French Electronics Industry's Strategic Committee (CSF)** has had a very strong activity since February 2020. A group meeting was thus held on March 17 to take stock of the progress of the work. The latter was notably marked by a presentation of the technological roadmap, the launch with the DGEFP of a commitment to development of employment and skills (EDEC) in the electronic and photonic sector, intensive discussions with the sectors downstream (eg automobile, health sector in Hauts-de-France).

"TO LAUNCH A COMMITMENT TO DEVELOPMENT OF EMPLOYMENT AND SKILLS"

The last two studies by Cabinet Décision carried out on behalf of the **European Commission** were the subject of a presentation focusing on the situation of the electronic industry in Europe. Regarding the Covid-19 epidemic, the CSF is at the heart of discussions with the public authorities and French Industry (e.g. monitoring of activity, availability of personal protective equipment, information on aid to companies, ambitious proposals on relaunch and relocation). The Ministry of Economy and Finance has thus recognized the activity of electronic manufacturing as *"essential to the economic functioning of our country"*. A new group meeting of the electronic industry is being held in the presence of the DGE to present to them the state of the reflections and proposals of the industry on recovery, revival and relocation.

SPDEI mobilized to deal with COVID-19

This first quarter 2020 has been marked by an unprecedented situation linked to the Covid-19 epidemic which impacted our profession from the start of the epidemic in China and then in Europe. First of all, allow me to renew to the members of SPDEI and its partners all my best wishes for good health. In this context, our profession has been strongly mobilized since the origin of the epidemic to support companies to enable them to maintain their activity while strictly ensuring the implementation of health precautionary measures.

"THE SPDEI HAS SET UP A DAILY INFORMATION POINT"

Thus, the SPDEI has set up a daily information point which lists all the useful communications in order to inform the members on health, economic and social measures.

The SPDEI is also a force for proposals within the electronic sector by contributing with its partners to help the public authorities to better understand the consequences of the health crisis on companies in the sector and to make strong proposals. The SPDEI remains of course at your disposal to meet this challenge.

Pascal FERNANDEZ Président