n° 2 - 2019

NEWS

FEDERATION IDEA

May-June 2019

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

ELKOMIT - Finland
Suppliers of Electronic Instruments and Components Association

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

"Trust as a Service" in the Electronic Components Supply Network…

You might not yet have encountered the abbreviation "TaaS" as it is a recent addition to the plethora of acronyms which business and commerce seemingly can't do without. Trust as a Service is however rapidly becoming firmly established within the Blockchain ecosystem and seems set to have a profound impact on the electronic components supply network. In this article Adam Fletcher, Chairman of IDEA provides an insight into TaaS technology and how it's likely to benefit members and their customers.…

Trust lies at the heart of our entire digital economy and infrastructure. We have to trust that our data and transactions are safe and secure, and that the services and Application Programming Interface (API) we rely on are well-tested and will be available and responsive when we need them.
The term **Trust as a Service** *(TaaS)* was coined by Fred McClimans, then a senior analyst with **HfS Research**, a firm with recognised expertise within the sourcing industry.
According to McClimans, enterprises and vendors need to do much more to assure trust within their organisations, especially when it comes to data security.

But he asserts that the TaaS paradigm goes well beyond technological fixes - such as firewalls, malware protection, Security Event and Information Management (SIEM), Data Loss Prevention (DLP), Identity Access Management (IAM), app and device security. He said: *"security isn't about securing assets, it's about creating trusted assets that can be leveraged in the market.*

Adam Fletcher, ECSN

Digital enterprises serving digitised consumers in a digital economy, need to build their business on the trust element". The consequences of a data breach to a business are severe McClimans said: *"If a partner or a customer feels that they can't trust an online or digital brand, they'll simply go elsewhere. Trustworthiness is golden, and this is a consideration that needs to go to the top of the stack of any business technology engagement"*.

Today a great deal of information is shared both upstream and downstream between manufacturers of electronic components, their authorised distributors and end-customers, but the efficiency of this interchange within the supply network is hugely reliant on getting good data from source and ensuring that it's not corrupted or compromised in the sharing process.

Much of this is information is held in different databases on discrete IT systems owned and controlled by each organisation and the cost and complexity of managing these multiple databases and IT systems especially on a global scale is high, as is the risk of losing or corrupting data between often disparate IT systems.

> *"Security means creating trusted assets that can be leveraged in the market"*

"TaaS" is a derivative of **Blockchain technology**, (essentially a digital ledger distributed across a peer-to-peer network that is publicly accessible to all subscribing users) in which blocks of information each containing the recorded information together with a cryptographic hash of the previous block and a timestamp.
Once recorded the information contained within any block cannot be changed without the *"consent of the network majority"*, which in a public system is almost impossible to achieve, and in any case requires that the records held in all subsequent blocks must also be changed. Further, in a Blockchain system there is only ever *"one version of the truth"* and that truth is fully traceable.
A Blockchain-based system is therefore extremely secure and also promises to combine this enhanced data integrity with lower operating costs.
No surprise therefore that the initial adaptation of the technology was to establish cryptocurrencies as a secure international banking system outside of the established regulated banking system.

TRUST AS A SERVICE (TAAS)

"TaaS" applies Blockchain technology in a "private mode" referred to as "Consortium", where the virtual ledger is stored on a private peer-to-peer network.

The lead organisation will only collaborate with other accredited and trusted third-party organisations in order to privately share information, making it secure, robust and reliable.
And because it is essentially a *"closed or private system"* it's possible to develop and debug the system and manage changes within it without compromising the integrity of the Ledger because a network majority can easily be achieved by consensus. A further step is a "Hybrid" Blockchain, in which a much wider group of users are able to view and extract agreed information elements from the Ledger within the "Consortium"

Blockchain and in some circumstances, can even be made available to Public Blockchain users. Many believe that Blockchain technology will all but eradicate the problem of counterfeit electronic components, because such parts will have no traceability within the Ledger and will therefore be easily identifiable.

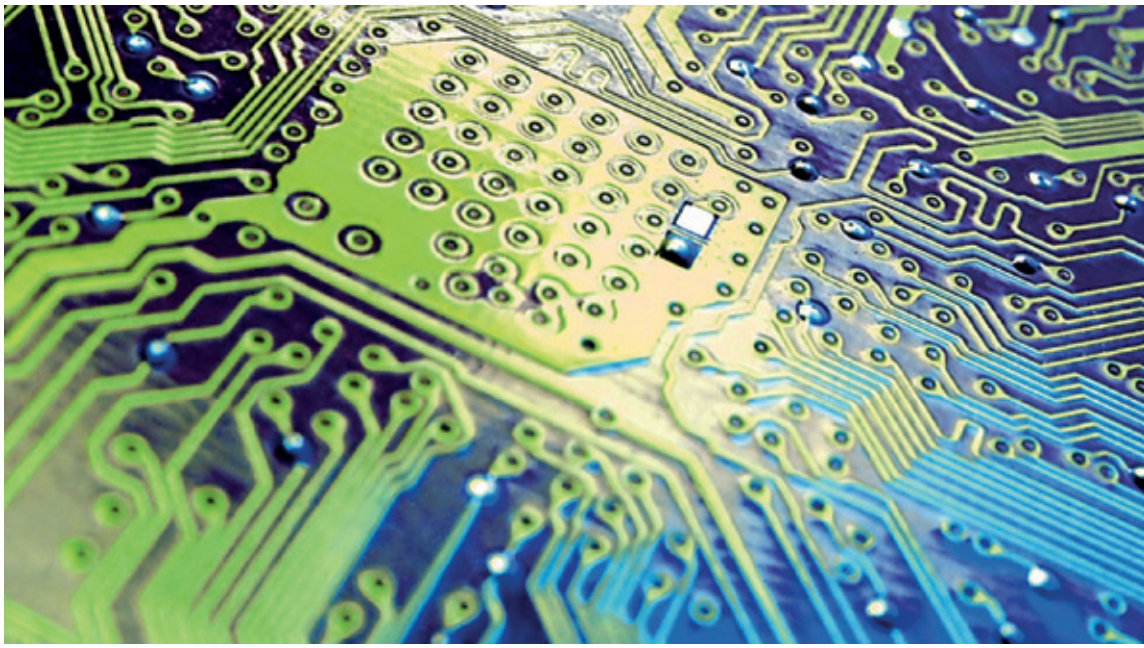
Blockchain solutions promise to deliver major benefits to the electronic components supply network, not least by improving trust in the data, reducing costs and increasing service levels for all. Blockchain-based "TaaS" technology will improve the way information is collected, retained and shared.

> *"Blockchain solutions promise to deliver major benefits to the electronics supply network"*

Critical supporting information (batch traceability, lot codes, certificates of conformity, place of manufacture etc) can be collected at many stages in the design, production, test, distribution and from the end customer and can be made easily and speedily accessible to all qualified members of the network.

ESTABLISHED BLOCKCHAIN APPLICATIONS…

Cryptocurrency investment and banking remains the principal driver of Blockchain applications and the technology is today operating alongside other long-established government backed currency systems.



It's also becoming established and accepted elsewhere and we"re seeing a lot of activity and development in other industries. Probably the best publicised has been Walmart's use of IBM's Blockchain development system to collaborate with its suppliers of fresh green-leaved vegetables.

The ability to track and manage their suppliers in almost real-time has huge cost reduction and consumer safety implications for Walmart and its reputation. Previously if a food safety threat was identified in fresh produce supplied to Walmart it would typically take seven days for the company to identify the source and then remove the infected goods from its supply network and shops.

When all of the company's suppliers of green-leaved vegetable are operating the IBM system later this year Walmart will be able to identify a partner within their supply network within seconds, enabling them to immediately withdraw affected produce from sale.

> *"TaaS Blockchain allows to reduce costs of developping and establishing industry standards"*

Closer to home Avnet, one of the largest international manufacturer-authorised distributors of electronic components announced in March 2019 that it now accepts payment from customers in Bitcoins or Bitcoin Cash. This is a bold move for Avnet, but I suspect we won't have to wait long before other organisations in the electronic components supply network engage with Blockchain technology.

FINAL THOUGHTS…

"TaaS" Blockchain solutions offer the electronic components supply network much in terms of reducing the cost of development and establishing public industry standards, whilst leveraging the expertise within multiple member organisations and thereby gaining economies of scale.

But successful implementation will take significant collaboration across the industry. Engaging with your organisation's partners in the electronic components supply network will be critical to realising the promised competitive edge within our domestic, European and Global markets.

Q1 2019: Slowing Global Economy bites into European Component Distribution

by **Aubrey Dunford**
www.ideaelectronics.com

Sales of Electronic Components through Distribution in Europe continued to grow in the first quarter of 2019, but the global economic slowdown is having an effect.

With the global economy slowing in the last quarter of 2018 and in the first quarter of 2019, growth in the European **Electronic Components Distribution Market** as shown in the Q1 2019 European Electronic Components Statistics has also slowed from around 7% for each quarter of 2018 when compared with the same quarter of 2017 to 3.6% for the first quarter of 2019 when compared to first quarter 2018. In many countries the seasonal pattern is for the first quarter of the year to be higher than the last quarter of the previous year as many companies take an extended holiday due to Christmas and the New Year.

Also, some companies look to reduce their inventory at the end of the calendar year. However, despite the growth in billings the level of booking in the first of 2019 was 2.2% higher than in the last quarter of 2018 but 12.3% lower than in the first quarter of 2018.

As can be seen from *Graphic T1* the book:bill having been above one for 8 successive quarters dropped in the last quarter of 2018 to 1 and in the first quarter of 2019 to 0.93.

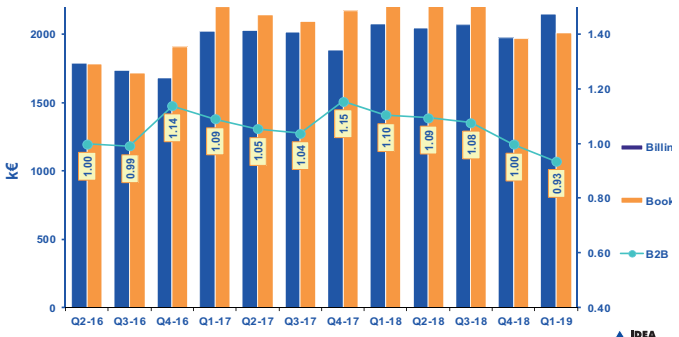
> *"The overall supply chain had become overstocked"*

This continues a slowing trend that had been seen throughout 2018 and indicating that the growth in the market is slowing. It is clear that the overall supply chain had become overstocked as product shortages and **uncertainty over Brexit** had given good reasons for companies along the chain to increase stock holding and order cover.

With the slowing of the global economy the supply/demand has come back into balance and so companies are now looking to reduce stock levels again. It is difficult to assess how much of the current slowdown is due to this effect and how much the under-lying demand has slowed. Sectors such as automotive are clearly reducing demand.

The outlook for the second half of 2019 is therefore difficult to forecast as so many different factors balance against each other. Hopefully resolution to trade issues will bring some confidence back into the markets.

1ST QTR. 2019 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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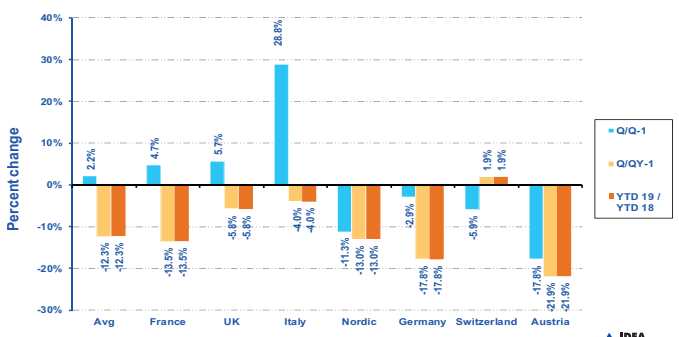
1ST QTR. 2019 TOTAL COMPONENTS BOOKING TREND *Graphic T2*
Distribution orders for Electronic components by country comparing current qtr with prior quarter (Q/Q1)and same quarter prior year (Q/QY-1) and YTD 18/17



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THE ECONOMIC OUTLOOK

According to the International Monetary Fund's World Economic Outlook published in April 2019 – "After strong growth in 2017 and early 2018, global economic activity slowed notably in the second half of last year, reflecting a confluence of factors affecting major economies.

China's growth declined following a combination of needed regulatory tightening to rein in shadow banking and an increase in trade tensions with the United States.

The euro area economy lost more momentum than expected as consumer and business confidence weakened and car production in Germany was disrupted by the introduction of new emission standards; investment dropped in Italy as sovereign spreads widened; and external demand, especially from emerging Asia, softened.

> *"Global economic growth is projected to slow to 3.3% in 2019"*

Elsewhere, natural disasters hurt activity in Japan. Trade tensions increasingly took a toll on business confidence and, so, financial market sentiment worsened, with financial conditions tightening for vulnerable emerging markets in the spring of 2018 and then in advanced economies later in the year, weighing on global demand. Conditions have eased in 2019 as the US Federal Reserve signalled a more accommodative monetary policy stance and markets became more optimistic about a US–China trade deal, but they remain slightly more restrictive than in the autumn of 2018.

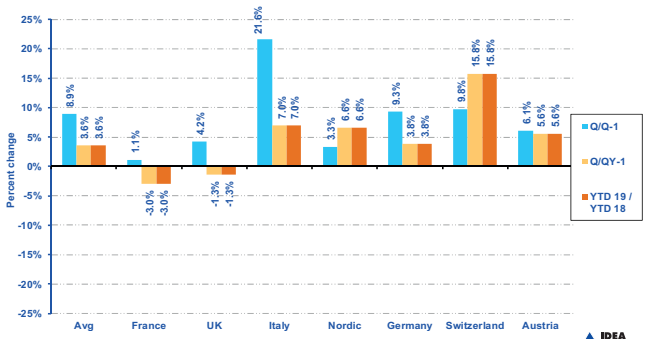
GLOBAL GROWTH IS SET TO MODERATE IN THE NEAR TERM, THEN PICK UP MODESTLY

As a result of these developments, global growth is now projected to slow from 3.6 percent in 2018 to 3.3 percent in 2019, before returning to 3.6 percent in 2020.

The current forecast envisages that global growth will level off in the first half of 2019 and firm up after that. The projected pickup in the second half of 2019 is predicated on an ongoing build-up of policy stimulus in China, recent improvements in global financial market sentiment, the waning of some temporary drags on growth in the euro area, and a gradual stabilization of conditions in stressed emerging market economies, including Argentina and Turkey. Improved momentum for emerging market and developing economies is projected to continue into 2020, primarily reflecting developments in economies currently experiencing macroeconomic distress - a forecast subject to notable uncertainty.

1ST QTR. 2019 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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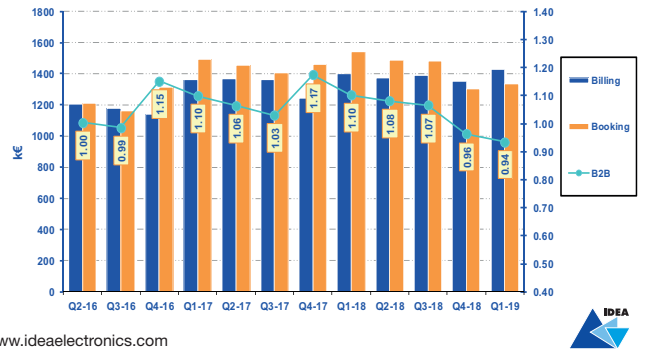
1ST QTR. 2019 SEMICONDUCTOR BOOKINGS, BILLINGS & BOOK:BILL RATIO *Graphic S1*

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



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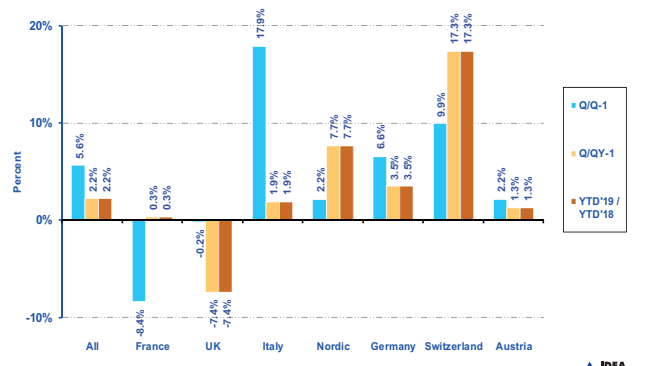
1ST QTR 2019 SEMICONDUCTOR BILLING TREND *Graphic S3*

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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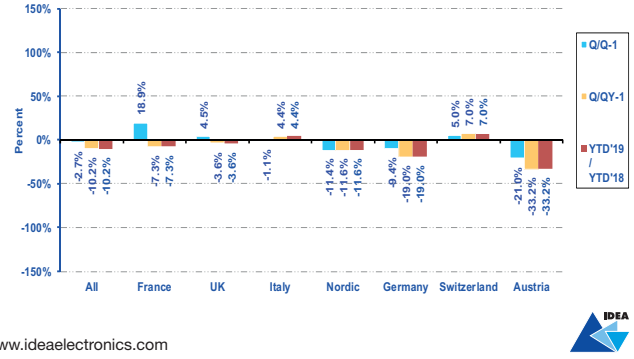
1ST QTR. 2019 PASSIVE COMPONENTS BOOKING TREND *Graphic P2*

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)



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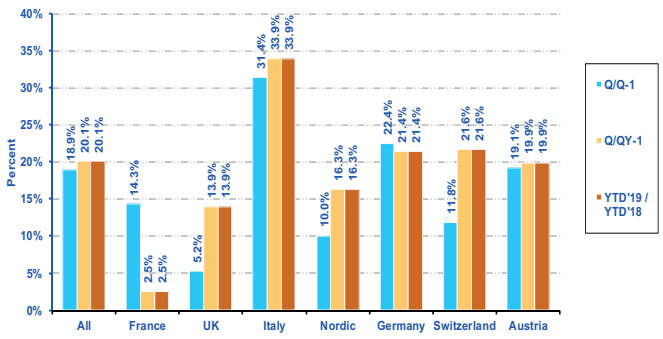
1ST QTR. 2019 PASSIVE COMPONENTS BILLINGS TREND *Graphic P3*

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



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By contrast, activity in advanced economies is projected to continue to slow gradually as the impact of US fiscal stimulus fades and growth tends toward the modest potential for the group.

Beyond 2020, global growth is set to plateau at about 3.6 percent over the medium term, sustained by the increase in the relative size of economies, such as those of China and India, which are projected to have robust growth by comparison to slower-growing advanced and emerging market economies (even though Chinese growth will eventually moderate)".

"The Book:Bill ratio of 0.94 indicates a slowing in the semiconductor market"

So, although 2018 was a good year for the Electronic Components Distribution Market throughout the world, the economic outlook and the dropping book:bill ratio in the European statistics show that 2019 is going to be a more difficult year but there are still encouraging signs.

Looking at the data from the Q1 2019 European Electronic Components Statistics we can see:

STILL GROWTH IN MOST COUNTRIES

As can be seen in *Graphic T3* there has been growth in Q1 2019 over Q1 2018 in most European countries, the **exceptions being in France and UK** . Growth was highest in Switzerland at 15.8% and lowest in France with a decline of -3.0%. Overall the growth was 3.6%. Although compared to the previous two years this level may feel a little disappointing there have been many years in the past decade when such a level of growth would have been welcomed.

The figures shown in *Graphic T2* show that bookings in Q1 2019 were overall 12.3% lower than Q1 2018, but overall bookings were 2.2% higher in Q1 2019 than they were in Q4 2018. Bookings in the first quarter in Italy were particularly strong compared to the last quarter of 2018 but were still 4% lower than in the first quarter of 2018.

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 8 quarters with the ratio being above one but a decline to 0.96 in the last quarter of 2018 and a further decline to 0.94 in the first quarter of 2019 indicating a distinct slowing within the semiconductor market. However as can be seen in Graphic S3 Billings in Q1 2019 were still 5.6% higher than in Q4 2018 with growth in all countries except **France**, (The highest growth was in Italy), and 2.2% higher compared to the first quarter of 2018 with growth in all countries except the UK. As with total components the highest growth on both measures was in Switzerland.

PASSIVES

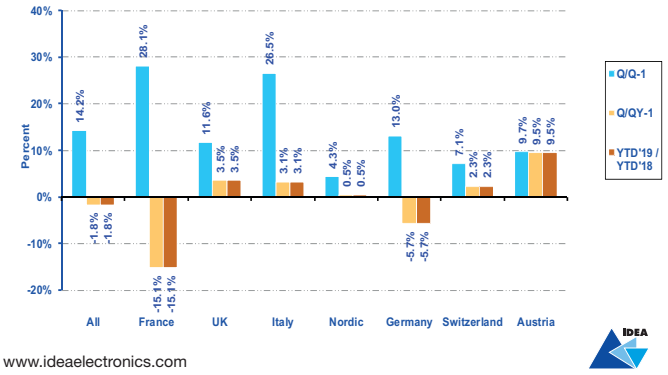
In the Passives Sector the book:bill ratio was positive for nine consecutive quarters, remaining positive even in the fourth quarter of 2018 but has now dropped to 0.87 in the first quarter of 2019.

As can be seen from *Graphic P3* there continues to be strong growth in this sector. Overall sales in Q1 2019 are 18.9% higher than in Q4 2018 and 20.1% higher when compared to Q1 2018.

There was strong growth in all countries with the highest being in Italy and the lowest in France. As *Graphic P2* shows this strong growth in billings has not been supported by strong bookings and hence the drop in the book:bill ration. Bookings overall were 2.7% lower than in the last quarter of 2019 and 10.2% lower that the first quarter of 2018.

1ST QTR. 2019 EMECH COMPONENTS BILLINGS TREND *Graphic E3*

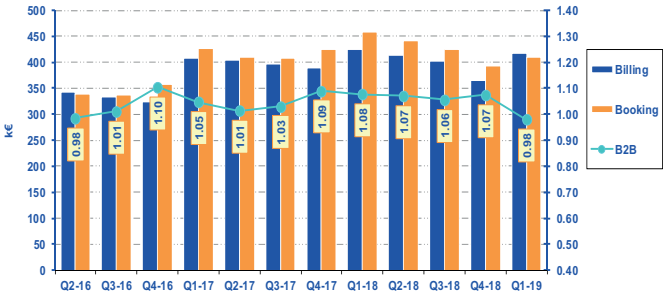
Distribution sales of emech components comparing current qtr with prior qtr (Q/Q-1) and same qtr prior year (Q/QY-1) plus YTD trend



www.ideaelectronics.com

1ST QTR. 2019 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



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This picture was consistent across most countries with the exception of France, Switzerland and UK with an increase in bookings of 18.9%, 5% and 4.5% respectively when compared to Q4 2018 and Switzerland and Italy with an increase in bookings of 7% and 4.4% respectively when compared to Q1 2018. This would indicate that we should expect the growth in Passive components to slow considerably in the coming quarters.

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 and did not show a decline in the last quarter of 2018 staying above unity for a tenth consecutive quarter. Although there was a decline in the first quarter of 2019 the ratio was only just below unity at 0.98.

> *"Strong growth has continued in the passives sector"*

Looking at *Graphic E3* shows that overall there was a growth of 14.2% in the first quarter of 2019 over the last quarter of 2018 with all countries showing growth, however billings in the Q1 2019 were 1.8% lower than in Q1 2018 due to large declines in France and Germany of 25.1% and 5.7% respectively. Bookings increased overall by 4.2% compared to Q4 2018 but declined 10.6% compared to Q1 2018. On this measure there was a decline in every country with the biggest being again France and Germany, and also Austria.

News

Raytheon & United Technologies to Merge

Leading defence contractor **Raytheon** and aerospace behemoth **United Technologies** have agreed to an all-stock merger of equals, a move that will make the combined company the third largest aerospace and defence (A&D) company in the world after Boeing and Airbus. The combination will be dubbed Raytheon Technologies Corp.

"The combination of United Technologies and Raytheon will define the future of aerospace and defence," said Greg Hayes, United Technologies Chairman and CEO in a written statement.
"By joining forces, we will have unsurpassed technology and expanded R&D capabilities that will allow us to invest through business cycles and address our customers' highest priorities.
Merging our portfolios will also deliver cost and revenue synergies that will create long-term value for our customers and shareowners."

Source: EETimes

Embedded Conference Scandinavia 2019

by **Lena Norder**
SE

ECS was initiated in 2006 by the Swedish Electronics Trade Association, **Svensk Elektronik (SE)**, and now it cements its position as Europe's largest conference with an adjoining exhibition with nearly 2,000 visitors in 2018.
World-leading suppliers as exhibitors and numerous qualitative conference presentations, tutorials and workshops contributed to the success of the event.
After 12 years, the organizers of **Embedded Conference Scandinavia** (ECS) continue the process of developing the event and putting together a world-class conference program.

Digitalization, IoT, System-of-Systems, Cyber-Physical Systems, AI and Machine Learning are some of the focus areas at this year's event which takes place November 5-6 at Kistamässan in Stockholm, Sweden. Among the speakers already confirmed for the program are Ted Schönbeck from Google, Richard Elberger from Amazon Web Services and Colin Williams from IBM Watson IoT.

The conference program for ECS 2019 will be published in early September. So far *"Securing IoT everywhere"* by Richard Elberger, Amazon Web Services and *"AI – from hype to reality"* by Ted Schönbeck, Google, are among the most interesting confirmed presentations.
The event will take place on the 5th and 6th of November in Stockholm

More info:
www.embeddedconference.se

Changes in the German ElektroG from May 1st, 2019

by **FBDi**

In the course of European harmonization the German-based "**Stiftung EAR**" will classify "passive" devices, which only transport electricity, also as electrical or electronic device with effect from May 1, 2019 for Germany.
This means that they then fall within the scope of application of **ElektroG** in Germany and, thus they must be registered and notified.
The FBDi association points out the deadline was May 1, 2019 – after this date manufacturers of passive devices must have applied for registration, which can be done on the portal of Stiftung EAR or via service companies (or distributors). The products need to be permanently marked with the crossed out garbage can.
Without identification the articles may not be sold in Germany after May 1, 2019.
The passive devices need to be registered in the categories 4 to 6.

This regulation applies only to devices which are designed for use with a voltage rating not exceeding 1000 volts for alternating voltage and 1500 volts for direct voltage, i.e. antennas, adapters (jack, plug), connectors, sockets (for fixed installation resp. assembly [i.e. wall, floor, machine] or DIN rail), and for fuses.

> ***"Passive devices then fall within the scope of application"***

Also not included in German's ElektroG are components such as cables delivered by the meter, ferrules, ring crimp terminals.
Detailed information regarding registration procedure and obligations arising from German ElektroG for manufacturers are provided on the website of Stiftung EAR.

Power semiconductors better than total semiconductors

by **Franco Musiari**
Assodel

What are we talking about when we refer to power semiconductors? The graph in *Figure 1* responds well to this question by placing the different types of products in the frequency domain to which they can operate and the powers they are able to manage.
Almost all power semiconductors fall into the category of discrete components: IGBT, MOSFET, typically in silicon but with the now consolidated presence of silicon carbide (SiC) or gallium nitride (GaN) MOSFETs.
But often both IGBTs and SiC MOSFETs (difficult to have those with Si) are assembled in sub-assemblies generically defined modules.

ITALIAN MARKET DATA

Table 1 shows the data of the results obtained from the different categories of devices that go under the definition of power semiconductors compared with the data collected from the total semiconductor market.
In a total market of electronic distribution, represented by the participants in **Assodel** *(Association of electronic districts)*, of 866 million euros the power devices represented 15.4% of this total which means just over 133 million.
The power market in 2018 saw a 12.4% growth compared to the previous year, compared to a +6% of the semiconductor market, showing a better behavior.

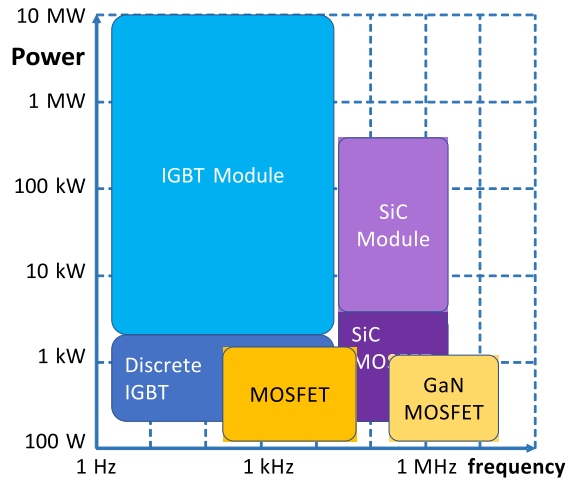
The last column of *Table 1* also shows the average annual growth, or CAGR *(Compound Annual Growth Rate)* from 2012 to 2018 and also this index shows that the power sector, in the last six years to which the statistics refers, has performed better than total semiconductors with +8.6% against 7.4% of the latter.
These indices mark a growth in the power devices sector, from 2012 to 2018, equal to + 64% while semiconductors have grown, compared to the 2012 value, by 53%.

> ***"The Power sector has performed better than total semiconductors"***

But *Table 1* also shows that the highest year-on-year growth was achieved by MOSFET devices that scored a powerful + 41% which led the CAGR to touch 11%.
The IGBTs also showed significant growth, just above +18%.

On the other hand, the power modules sector, which also represents the heaviest portion of the basket, covering 41% of the total, stands out for an average annual growth of over 15%.
Only one family, that of diodes, shows signs of a very slight decline that can be read in an average annual growth from 2012 to 2018 of -0.1%.

CATEGORIES OF POWER SWITCHES *Figure 1*



Source: Assodel

A COMPARISON WITH THE WORLD MARKET

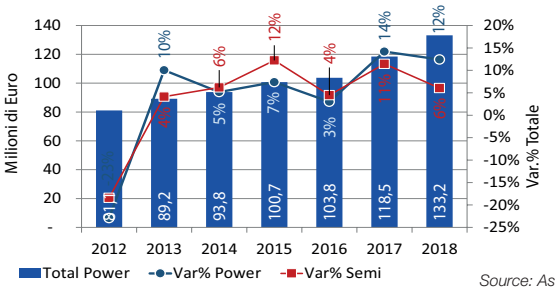
Looking at the *Figure 3* comparing it with the one just seen in *Figure 2*.
That of *Figure 2* shows a slightly wider time window and above all it indicates the forecasts that IC Insight sees for 2019 and 2020.
The two charts have a particularly significant decline in turnover in 2012 but subsequently the Italian market has enjoyed a succession of years with all positive performances, between the minimum of +3% and the maximum of +14% of 2017 .

POWER SEMIS 2018 VS 2017 AND 2012

Table 1

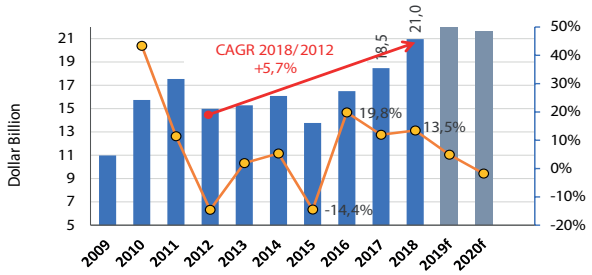
Mil. Euro	2018	2017	18/'17%	CAGR ('18/'12)%
MOSFET	27.9	19.8	40.7%	10.7%
IGBT	31.2	26.4	18.3%	7.2%
Diodes	23.5	23.7	-0.9%	-0.1%
Power & Module	50.6	8.5	4,2%	15.2%
Total Power	133.2	118.5	12.4%	8.6%
Total Semi	866.3	817.0	6.0%	7.4%
Power/Semi	15.4%	14.5%		

POWER SEMICONDUCTORS - TREND ITALIAN MARKET *Figure 2*



Source: Assodel

POWER DISCRETE MODULES W/W MARKET *Figure 3*



A more immediate comparison covering the entire 2012-2018 interval looks at the average annual growth rate (CAGR) which for the Italian market was 8.6% but was a +5.7 %, for the W/W market..
The growth shown in the last two years both at the Italian level and at the global level have certainly been positively influenced as well as by a strong demand in terms of quantity also by the situation of shortage that led to an increase in prices.

The average price for power components is estimated to have grown by 6% with delivery times for some of the most popular devices - such as power MOSFETs - which have reached 40 weeks compared to eight weeks in normal market conditions.
The level of demand remained strong also in the first quarter both worldwide and locally, but analysts expect the product shortage to be reduced, leading to much more moderate growths in the second half of the year.
2019 should therefore see growth of around +5% followed by a slight decline in 2020. A decline caused by a reduction in demand and a consequent reduction in prices forced by a slight excess of production capacity.

WHO ARE THE PLAYERS?

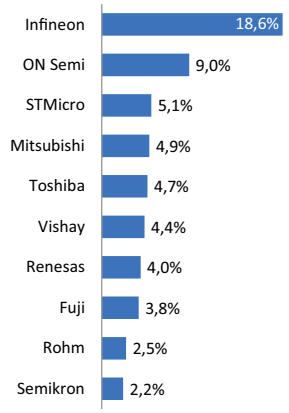
If we refer to the total market of power devices **IHS Markit**, which was taken as a reference for the graph of *Figure 3*, estimated the world market at the level of $ 18.5 billion that was distributed, among the top ten in terms of turnover, according to the quotas reported in *Figure 4*.
At the top is the German **Infineon** with a market share of 18.6% which double the value of the direct follower, **On Semiconductor**.

Surely the portfolio of products that Infineon is able to offer to this market is among the widest: MOSFET both in silicon technology and in SiC and GaN technologies (after the acquisition of International Rectifier).
The CoolGaN gallium nitride technology that complements the CoolSiC technology completes the MOSFET offering alongside the Super Junction (SJ) silicon devices of the CoolMOS family.
The extension of the CoolGaN offer to 100 and 200 volts will then complement the long-running OptiMOS line.

And it also obtains leading positions in the world of discrete IGBTs and in the form of modules with market shares of over 30%.
In second place, with 9% market share, is ON Semiconductor which reaches this position after the Fairchild acquisition completed towards the end of 2016.

The union of the two companies had created an entity capable of around five billion dollars that today they have become almost six.
Fairchild brought with it a good position in power technologies but above all its know-how of SiC technology which by 2023 is expected to grow at an average annual rate of about 27% .
In third position **STMicroelectronics** has a market share of just over 5% while all those that follow are below this threshold.
The sum of all the top ten leads to a market coverage for devices and power modules of 59% demonstrating a highly fragmented market.
From the tenth position obtained by **Semikron** with 2.2% the rest of the market is covered by more of 40/50 companies all below the 2% quota.

POWER - TOP PLAYERS *Figure 4*



Aspec pushes for changes to Evasion Economic Commission regulationns

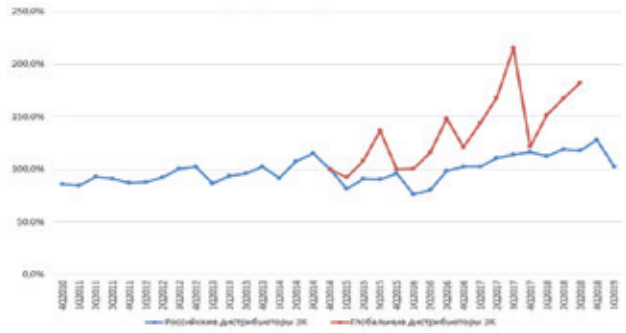
by **Evgeny Suvorov**
ARPE/ASPEC
en.arpe.ru

One of the significant problems in the Russian business of supplying electronic components is related to the mandatory certification of imported low-voltage equipment for its safety. The problem is that the majority of the imported components fall under the definition of low-voltage equipment due to the fallacy of the originally specified definition. Thus, every year, distributors are forced to undergo certification for each item supplied, which is already a very complicated procedure.
For several years, the **Association of Suppliers of Electronic Components** has applied to various executive authorities with a request to sort out the issue and revise existing regulations and procedures.
Taking into account that the Russian Federation is a member of the Customs Union, this issue is the subject of technical regulation of the **Eurasian Economic Commission**.
The Customs Union unites 5 countries: Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia. At the end of 2017, taking into account the multiple appeals, including ASPEC appeal on the problems of certification of low-voltage equipment, a draft of changes to the technical regulations was prepared and sent to the EEC Board.
This document was supposed to remove a number of issues in addition to the issue of assigning electronic components to electrical equipment. Having reviewed the proposal, the project was sent to Member States for internal approval.
At the level of Russia, the consideration took place throughtout entire the year 2018. Some provisions of the project caused controversy between various Ministries. Therefore, their positions had to be settled.

> *"The Ministry of Industry and Trade is preparing draft amendments of the regulations"*

However, now, after agreeing with the parties concerned and settling the positions, the Ministry of Industry and Trade, as the responsible executive authority, is preparing the state approval of the draft amendments to the technical regulations. It should be noted that the issues of exclusion of electronic components from the concept of electrical equipment are preserved in the draft, and in the future, it will eliminate the need of mandatory certification for customs clearance of imported components.
However, there are still several months ahead of the mandatory stages of the passage of this document before its final approval and taking action. These are the approval of the Government Commission of the Russian Federation, the approval by the Board of the Eurasian Economic Commission, the final resolution of the EEC Council. According to various estimates, this period may take about six months.
In addition, the resolution of the EEC Council on amendments to the technical regulations of the Customs Union takes action after 180 days from the date of its official publication.
Thus, the optimistic forecast for solving this problem is about 1 year. ASPEC constantly monitors the work of coordination and decision-making of various executive authorities both at the Russia level and at the EEC level.
Additionally, I want to inform you that the ASPEC will present the annual report of survey of the Russian market of electronic components already on May 23.
The report will be available for purchasing from May 30.
Below are key charts of the servey: Quarterly monitoring of distributor sales of electronic components *(blue line – Russian distributors, red – global)*

VOLUME AND GROWTH OF THE RUSSIAN MARKET OF ELECTRONIC COMPONENTS *Figure 1*



Source: ASPEC

The electronic eco-system in France

Interview of Masafumi Tanaka, Head of Electronic Systems Office Ministry of Economy and Finance - DGE

by **SPDEI**
Source: SPDEI Newsletter

Masafumi Tanaka, DGE

1. The electronic sector recently obtained the creation of a strategic division committee dedicated to its industry. What are the big challenges of this committee in your eyes?
In the first place, it should be recalled that it is the industrialists themselves who define, in consultation with the State services, the strategic projects of the strategic committees of value chains.

The French electronics manufacturing players, grouped together in ACSIEL alliance électronique, SNESE, SPDEI and Embedded France, have identified for their sector, with the support of FIEEC, the following five major issues:

1) **master existing and future key technologies** in order to stay at the state of the art;
2) **accelerate the electronics industry** of the future by digitizing manufacturing and supply chains to increase productivity and competitiveness;
3) **to bring solutions for the digital transformation** of other industrial sectors through the diffusion of electronics and embedded software technologies;
4) adapt, in quality, typology and volume, **skills and jobs to the needs of the electronics industry**;
5) **act together on a European and international scale** to weigh against international players sometimes very large. In addition, the sector has demonstrated its strong desire to be involved in the national strategy for artificial intelligence, particularly with regard to the development of adapted processors.

> *"The electronic manufacturing in France can be perfectly competitive"*

It seems to me that one of the major challenges of the electronics industry is also to be known and recognized in the **National Council of Industry** by the other strategic committees of the sector. The electronics industry is suffering from a lack of image, and a prejudice according to which there would be no more electronic manufacturing activity in France; nothing is more wrong ! French electronics outsourcing is even the largest in Europe in terms of turnover, ahead of Germany, and the leading European component manufacturer in 2018 is also French.
It is therefore important for the electronics industry to establish business relationships with other industrial sectors, and to convince them that electronic manufacturing in France can be perfectly competitive, particularly for small and medium-sized series, and for high value-added cards. for which proximity to the end customer is a real competitive advantage.

2. The results of the PIPAME study will never be disclosed. What were the reasons for launching it and what will be its future in the framework of the development of French industrial policy?
The launch of this study is part of a reflection that the DGE has long been pursuing on what could be done in support of the national electronics industry, beyond the component sector. Regarding the development of the French digital ecosystem, much has already been done, and I believe with success, including the French Tech.

But it is rather the software technologies that have been highlighted, whether mobile applications, Internet platforms, for the analysis of mega-data, cyber-security of connected objects, or software. embedded to name a few key areas. But very little has been said about the material component of the digital revolution; gold, no digital without electronic cards!

The organization of the 22nd edition of the *World Electronic Forum in Angers* in October 2017, as well as the brainstorming work carried out by the players in the electronic manufacturing industry, spurred on by the We-Network cluster of companies, which largely fueled Roland Berger's report on the electronic industry of the future, were triggers for the launch of the PIPAME *(interdepartmental pole of prospective and anticipationof economic changes)* study.

The recommendations of the report certainly have the ambition to have a global scope, but were however developed in a context where the Angevin ecosystem was very strongly represented. In association with the other funders of the study, the SNESE, ACSIEL alliance électronique, FIEEC and SPDEI, we wanted to have our own study from the outset in a national and international perspective.

3. SPDEI wants to be a building partner in your direction. What do you look at our profession and role in the sector?
Trade unions are natural interlocutors of the state because they represent interests common to a sector of activity beyond the individual concerns of each company.

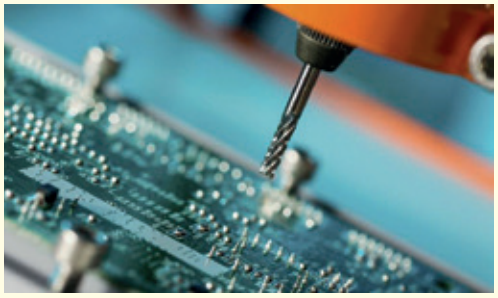
Electronic distribution has evolved considerably in recent years, considerably expanding their activities to a variety of services that sometimes go as far as competing with design offices!

France: a strategic contract on the electronics industry

On March 15, 2019, Bruno Le Maire, Minister of the Economy and Finance, signed with the Chairman of the Strategic Committee of Industry (CSF) "Electronics Industry", Thierry Tingaud, and his Vice President, Vincent Bedouin, the Strategic Contract of the electronic sector.
The electronics industry has 1100 highly specialized and skilled companies, and represents 200,000 direct jobs and 150,000 indirect jobs. Its turnover amounts to 15 billion euros.

It is at the heart of the French industrial dynamic and represents an important vector for the competitiveness of the industry. It is also one of the keystones of national strategic and economic sovereignty, ensuring our technological independence. Structured around six levers of action, the signed contract aims to make the electronic industry even more efficient and, given its pervasiveness, to train the entire French industry in the path of modernization:

1. Master key technologies:
- **Plan Nano2022:** This program is part of a structuring process at the European and French level and aims at technological developments on micro-nanoelectronic elementary bricks up to pre-industrialization.
- **Project "cyber-physical systems" (CPS)** on the digital architecture of cyber physical systems to bring the digital architectures of CPS within reach of the entire French industry.



2. Accelerate the Future Electronics Industry:
- Identification and development of acceleration platforms for the electronics industry of the future.
- Optimization of the supply chain by developing communication and making the transmission of information more fluid between the actors.

3. Disseminate electronics as part of the digital transformation of businesses:
- Accelerate the development of SMEs through collaborative R&D between electronics specialists themselves and with SMEs using technology.

4. Adapt skills and jobs to the needs of the industry:
- Structuring and strengthening the offer of continuous training to provide quick answers to recruitment challenges in the industry.
- Reinforcement of initial and alternating training as well as bridges between industry and schools by encouraging the intervention of industrialists in curricula, the mobility of teachers in companiesor the training of teachers in the rapid evolution of the sector .

5. Acting on a European scale and projecting itself internationally:
- Export: the sector will participate in actions taken for the international development of companies (Large companies, ETI, SMEs and Startups) and their exports.

6. Artificial Intelligence, a structuring project for the sector:
- Provide France with semiconductor technologies adapted to these new needs as well as new microcomputer components integrating hardware and software functions of artificial intelligence in order to develop leadership in the field of edge computing market.

Distributors are now playing a very important role in a French electronic manufacturing ecosystem composed Mainly of SMEs, far beyond the mere distribution.

Policy Framework in the Electric Mobility space in India

by **Rajoo Goel**
Elcina
www.elcina.com

Electric mobility in India is a recent concept of the last decade and prior to that there were only small experiments with respect to Electrification. We take a brief look at the overall policy framework for **Electric Mobility** in India in this document.

THE BEGINNING WITH A MNRE SCHEME FOR EVs – "KEY INSERTION"

A focus on E- Mobility in India started in November 2010. This was when the Ministry of New & Renewable Energy came up with a policy for Electric Vehicles, this was called as a MNRE scheme for Fiscal incentives for EVs. The Ministry of New and Renewable Energy (MNRE), in November 2010, introduced a Rs 95 crore subsidy scheme to provide incentives to electric vehicle buyers.

The scheme provided subsidies of up to 20 per cent on ex-factory prices of electric vehicles translating into a Rs. 4000 discount for low-speed and Rs. 5000 discount for high-speed electric two wheelers; and close to Rs. 1,00,000 for electric cars. The plan appeared to work with sales increasing by close to 70% in 2011 touching 80,000 units.

In March 2012, the scheme was discontinued, when programs under the 11th Plan period drew to a close. This caused a steep drop in sales to about 3000 units a month with not a single electric car being sold in the months of April and May 2012. Of the 1000 dealerships in the country, 250 shut down and 3 out of 12 e-bike manufacturers shut shop. This clearly highlights the dependence of the industry on subsidies.

On August 29 2012, in the first meeting between MNRE and Ministry of Heavy Industries, the Government decided to extend the above subsidy scheme until proposals for subsidies under the National Mission for Electric Mobility (NMEM) are formulated.

> *"Not a single electric car was sold in April/May 2012"*

The MNRE reinstated the subsidy scheme in September giving in to the pleas from electric vehicle manufacturers.

While the MNRE's scheme boosted sales of electric vehicles two-fold, it did little to create a sustainable market. The most common reasons cited for the electric vehicles market not picking up the first time around were lack of awareness creation and support infrastructure viz. charging stations. India currently has about 1500 electric cars and 400,000 electric bikes on the road.

NEMMP (NATIONAL ELECTRIC MOBILITY MISSION PLAN) 2020 – "CRANKING UP THE ENGINE"

Under the NEMMP 2020, the government has launched the "National Mission for Electric Mobility". Under this mission, the government would use the following mechanisms/ policies to increase the usage of electric vehicles in India:

- **Permissive legislations:** Legislations to allow usage of electric vehicles in various areas, if not already allowed
- **Operational regulations:** Use of legislation framework

and regulations aimed at setting safety regulations, emission regulations, vehicle performance standards, charging infrastructure standards, etc.

- **Fiscal policy measures:** Trade related policies for shaping the market, imports and exports
- Manufacturing policies aimed at **encouraging investments**
- Specific policies aimed at incentivizing manufacturing and early adoption of electric vehicles through **demand creation initiatives**
- **Schemes and pilot projects** for facilitating infrastructure creation
- Policy for facilitating **research & development**

National Electric Mobility Plan (NEMMP) 2020 was planned to deploy 5 to 7 million electric vehicles in the country by 2020. NEMMP had a target of 400,000 passenger battery electric cars (BEVs) by 2020 avoiding 120 million barrels of oil and 4 million tons of CO2.
Total investment required for this scheme was Rs. 20,000 – 23,000 Crores (approx. 3 billion USD).
Apart from launching this Plan and a few pilot projects, nothing much was done on the ground in terms of implementation of this policy till 2015 when the new government came and launched FAME in April 2015.

FAME - FASTER ADOPTION AND MANUFACTURING OF HYBRID AND ELECTRIC VEHICLES WAS LAUNCHED IN APRIL 2015 TO FAST TRACK THE GOALS OF NEMMP 2020 PLAN – "COMBUSTION AND ENGAGING THE GEAR BOX"

In order to promote the sale of electric vehicles in the Indian market, the government launched FAME scheme *(Faster Adoption and Manufacturing of Hybrid and Electric vehicles)* in India, as a part of the National Electric Mobility Mission Plan 2020, under which, the government would provide certain incentives to lower the purchasing cost of electric vehicles.
The scheme has 4 focus areas i.e. Technology Development, Demand Creation, Pilot Projects and Charging Infrastructure.
Overall, the government is expected to spend around Rs. 14,000 Crores for this scheme, which includes incentives to the customers for purchasing the electric vehicles, incentives to the manufacturers for research and development besides developing the charging infrastructure.
During the financial Year 2015-16, an amount of Rs. 75 Crores was allocated for this scheme, which was almost fully utilised.
In the last financial year (2016-17), Rs. 91 Crores (approx.) have been utilised out of the budget allocation of Rs. 122.90 Crores.
Under phase 1 of this scheme, support was extended to buyers during the fiscal years 2015-16 (Rs. 260 Crores), 2016-17 (Rs. 535 Crores) and 2017-18 (Rs. 750 crs).

Further incentives would be provided depending upon the success of phase 1. Incentives of about Rs. 33 to 66 Lakhs are planned for each electric bus which typically costs around Rs. 1-2 Crores (imported buses) and around Rs. 50-80 Lakhs (domestically manufactured)
Under the JNNURM (Jawaharlal Nehru National Urban Renewal Mission), NEMMP (National Electric Mobility Mission Plan) and Smart city plans launched by the government, various state and local transport bodies are expected to purchase electric buses over the next 5 years.

> *"The scheme includes incentives to the manufacturers for research and development"*

The Phase 1 of the scheme was to be implemented for 2 years – 2015-16 and 2016-17. This was extended to 2017-18 and now it has been extended to 2018-19 or till a FAME 2 will be launched.
In the recent extension of Fame 1 from Oct 1, 2018 to March 31st, 2019, the DHI has made the policy applicable only for Lithium Ion Battery driven vehicles and not for conventional battery driven vehicles.
Apart from the direct incentives to vehicle buyers, this policy also led to various pilot infrastructure projects being set out and also 11 cities were selected to be provided with Electric Buses, for which the tenders have been issued.
Also, other ministries have come up with supporting policy frameworks to support the Electric Mobility space.
Power Ministry has come up with a clarification and notification recently that the EV Charging Infrastructure business was not to be considered as "Electricity Sale" but to be treated as a "Service" business and is open for all to set up EV Charging Facilities.
A Fame 2 / EV Policy is expected soon with a specific focus on an impetus to Make in India.

(ELCINA Directory 2019 edition)

Distributor Sales in North America grow again in 2018 as Electronics Market continues to expand

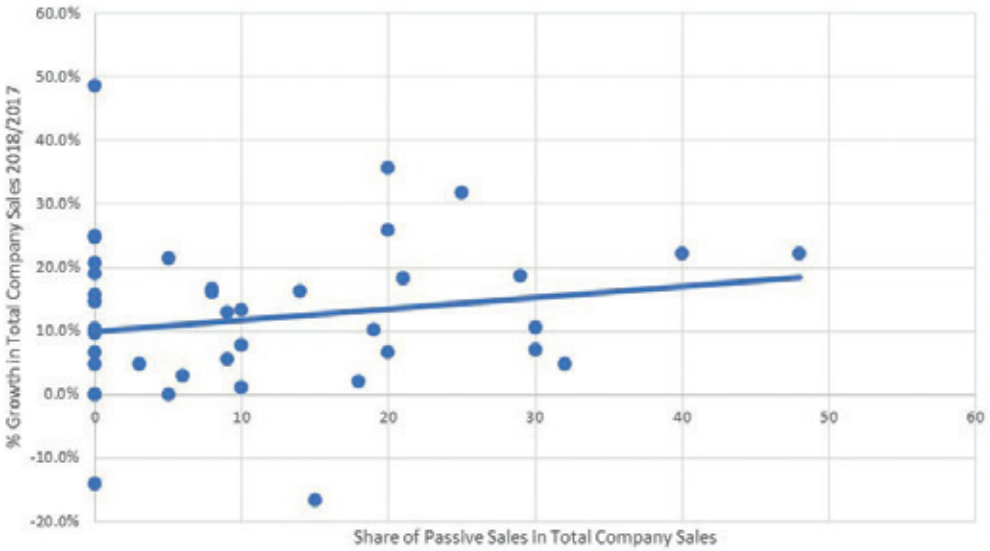
by **Aubrey Dunford**
Europartners

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 2018.

The North American (NA) franchised distribution industry continued its growth in 2018. After an 8 percent growth in 2017, 2018 growth accelerated to 9.8 percent. Our figures show that the sales of the top franchised distributors grew from $27.5 billion in 2017 to $30 billion in 2018.
As in 2017, the increase in demand across virtually all market segments meant continuing shortages of some commodity components and long-lead times in every product category.

Sales of Semiconductors (Active components) by Distributors in North America grew by 10.7 percent to $14 billion whilst sales of Passive and Electromechanical Products grew by 19.5 percent to just under $6 billion. Sales of Computer Products are becoming less important to the top distributors as this business moves away into other channels.

COMPANIES WITH HIGHER PASSIVE SALES SHOW HIGHER GROWTH *Figure 1*



Source: Europartners

ELECTRONICS DISTRIBUTORS SEE FURTHER REVENUE INCREASE IN 2018

Throughout the history of the electronics industry the market – and more especially the market for components, the value of the market on an annual basis looks like a design for a roller-coaster with dramatic ups and downs.

> ***"Sales of the top franchised distributors grew from $27.5Bn in 2017 to $30Bn in 2018"***

After a decline in 2016, a rise of 8 percent in 2017 brought a different set of challenges. One of the key questions was – Is this upturn going to last? The data for 2018 shows that despite the difficulties, the revenue of the top distributors in North America grew by a further 10 percent.

Throughout 2018 as in 2017 there have been shortages in several areas mostly in commodity products such as passive components and also semiconductor products such as power transistors.
The expansion of the sector could also be seen in other ways. Of the companies that provided employee

data in our survey 53 percent had increased their headcount and 32 percent had maintained their employee numbers. 16 percent had cut their workforce.

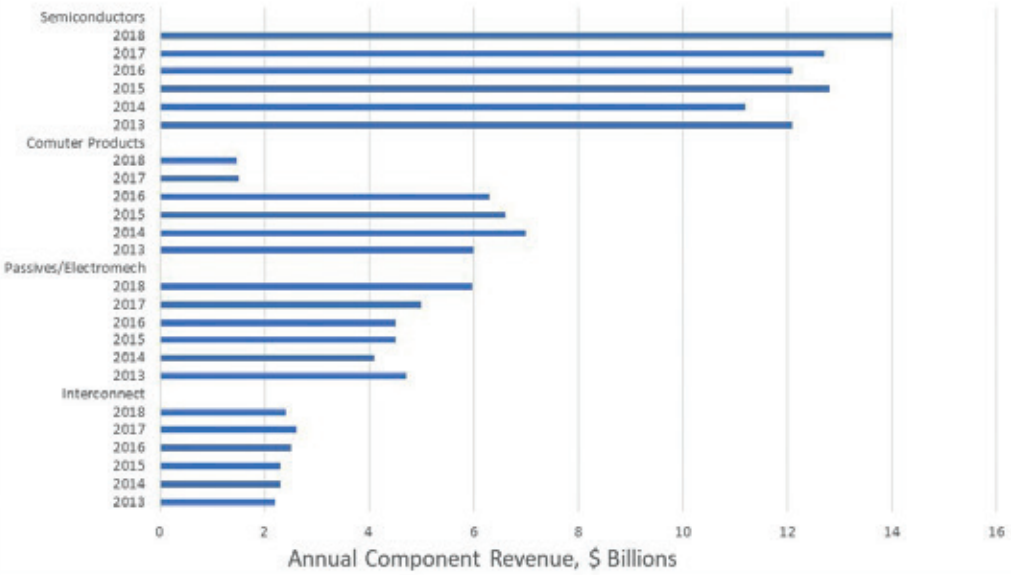
Sales of Semiconductors (Active Components) accounted for 57 percent of the total NA Distribution Sales which is the same share as in 2017.

Total sales for the top distributors increased by 9.4 percent. In our survey 26 companies provided figures for semiconductor sales. According to **World Semiconductor Trade Statistics (WSTS)** the total growth in semiconductors sales in the Americas as a total was 16.4 percent. Some of the highest growth areas for semiconductors are not in markets that are served by distributors. Passive and Electromechanical Product sales accounted for 24 percent of the total sales up from 23% in 2017.

This figure is based upon 37 companies who supplied sales figures. The total sales of these companies was $5.9 billion up from $5 billion in 2017 an increase of 19.5 percent. According to The **Electronic Components Industry Association (ECIA)** global sales of passive products increased in 2018 by 25.2 percent. They report that global average selling prices increased by 7.3 percent. They also state that the Americas account for about

PASSIVES/ELECTROMECHANICAL SHOW STRONGEST GROWTH IN COMPONENT CATEGORIES

Figure 2



Source: Europartners

10 percent of the global sales. There can be little doubt that with the supply constraints that there were in 2018 around many passive products that sales price increase has contributed to the market growth.

Analysis of the sales growth reported by the top distributors shows 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.

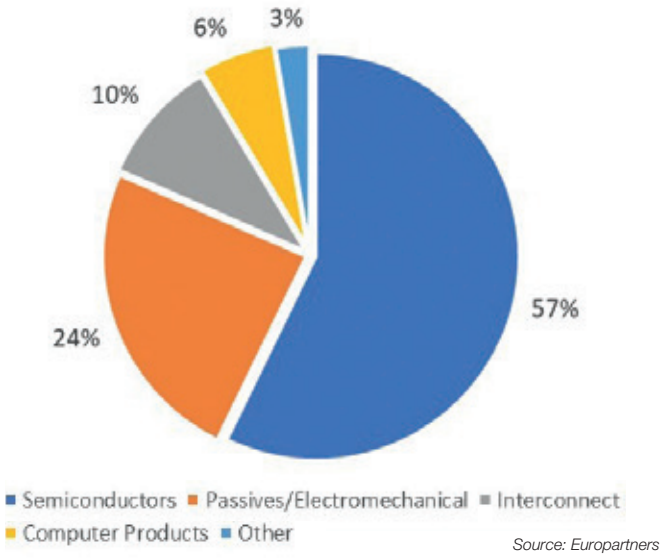
> *"Passive products sales price increase has contributed to the market growth"*

Interconnect Products made up 10 percent of the top distributors sales in 2018, down slightly from 11 percent in 2017. 32 companies reported their sales in our survey.
This brought the sales in 2018 $2.4 billion, down 6.5 percent from the $2.6 billion in 2017. According to data published by Bishops & Associates total sales of Connectors in North America grew by about 12 percent in 2018.

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 15 companies reported sales of computer products and these totaled $1.45 billion in 2018 down by 2.7 percent from $1.5 billion in 2017.

Overall this segment accounts for 6% of the total sales in 2018 down from 7 percent in 2017. 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.
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

PASSIVES EXPAND SHARE OF MARKET (% OF NA REVENUE OF TOP DISTRIBUTORS, 2018) *Figure 3*



Source: Europartners

21 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.
Of these the use of batteries as components is significant with two distributors in the survey reporting their sales almost totally within this category. House of Batteries (Ranked 29) and Fedco Batteries (Ranked 39T).

Overall the reported sales increased by 34 percent from $484 million to $651 million
Overall, 2018 saw a further expansion of the **North American Distribution Market** by 10%.
Of the 48 companies who provided sales turnover for our survey, 38 companies reported sales growth with an average growth of 14.6 percent, 7 companies reported flat sales and 3 reported a decline in sales.

Twenty-Four companies had double digit growth up from 21 companies in 2017.
Within the top 10, six companies had double digit growth.
Notably Mouser reported a growth of 35.6 percent, (although the highest growth was reported by Symmetry Electronics who were acquired in July 2017 by TTI). Mouser's growth was only marginally ahead of **Digi-Key** with a growth of 31.7 percent. **TTI** itself reported a growth of 22 percent.

The two top distributors also grew their sales with **Arrow** reporting a 10.1 percent increase whilst **Avnet** which had a more difficult year due to the changes brought about by consolidation in the semiconductor industry posted a growth of 2 percent.

"Many distributors mentioned the difficulty in finding good qualified people"

The key difficulty for almost all distributors in 2018 was being able to supply sufficient product to meet customer demands. There were severe shortages in some commodity areas such as MLCC capacitors and discrete semiconductors, especially power transistors, but manufacturers of many products were finding it difficult to meet the growing global demand.

Although towards the end of the year these pressures started to ease the shortages in some areas will continue into 2019.
Many distributors in our survey mentioned the difficulty in finding good qualified people as many people who have worked in the electronic distribution industry are reaching retirement.
Our survey shows that 66.1 percent of the sales of the distributors that provided the information, goes to OEM companies, with 29.2 percent going to EMS/ODM companies. The remainder 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 28 percent of sales by distributor companies which is the same as in 2017.
Aerospace/military has decreased from 24 percent in 2017 to 20 percent in 2018, whereas mobile has increased from 2 percent in 2017 to 9 percent in 2018. The share in the other segments were:
- Automotive 11 percent, Computers and Peripherals 4 percent, Energy 3 percent, Medical 6 percent, Telecommunications 6% and other segments 12 percent.

Innovation and expansion drives growth of Global Cable Assembly Market

by **Ron Bishop**
Bishop & Associates

The worldwide market for cable assemblies continues to grow as new technologies proliferate and reach emerging markets around the world. An upcoming report by Bishop & Associates takes a closer look.

The worldwide market for cable assemblies is growing, expanding by 10.8% to $171.8 billion in 2018. This double-digit growth marks the second-highest growth year for the cable assembly industry since the 2010 recession recovery, coming in just shy of the 11.0% increase seen in 2017.

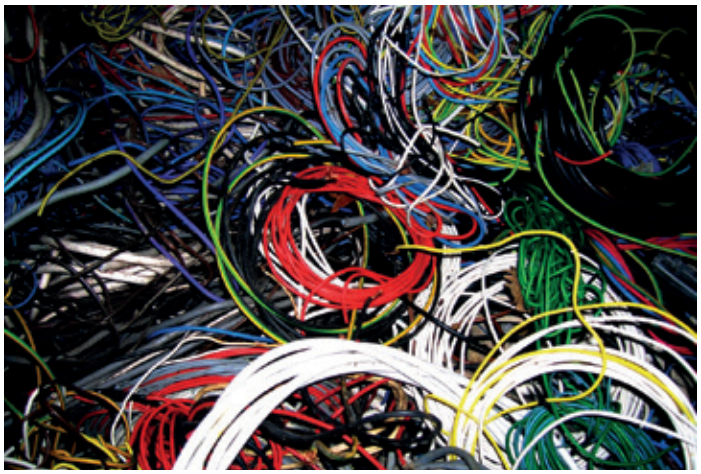
2018 was a good year for most major economies. Gross Domestic Producer (GDP) grew 3.1% worldwide. The automotive business, which is a major driver of the global cable assembly market, was down a bit in unit volume production, but the electronic content of each vehicle was up. The telecom/datacom market - another major driver of the global cable assembly market - also grew with infrastructure expansion aimed at supporting new technologies ranging from vehicle-to-everything (V2X) communications to 5G connectivity.

The greatest threats to attaining the forecasted growth in 2019 and beyond include socio-political unrest (particularly in the Middle East, Eastern Europe, and Asia), changes to trading relationships between the major economies of the world (such as tariffs, Brexit, NAFTA, etc.), and financial market turmoil, as the markets adjust to these new realities.

> *"The global cable assembly market is anticipated to reach $238.8 billion by 2024"*

The global cable assembly market is anticipated to grow at a compound annual rate (CAGR) of 5.9% from 2019 to 2024, expanding to a market value of **$238.8 billion**. Regional GDP growth, regional market sector performance, and the lack of projected worldwide recessions during this timeframe were the primary drivers for these projections.

Worldwide market share in the cable assembly market is beginning to stabilize;



the shift to Asia has slowed and some segments of the global cable assembly market, like the automotive industry, will ultimately stay where the final products are being assembled.

However, China will likely retain its status as the world's manufacturer, as well as the prosperity (and increasing costs) that come with success, and its market share growth will primarily result from its growing home market.

As a result, we are projecting a smaller shift in the worldwide market for cable assemblies over this forecast period.

KEY TRENDS IMPACTING THE CABLE ASSEMBLY INDUSTRY

The current economic trends in each region are rooted in long-term issues and situations that will not change in a five-year time span.

For example, China is well into an industrial expansion that has brought significant business to its shores, provided significant improvement to standards

News

Chipmakers Open Chequebooks to Bolster Connectivity

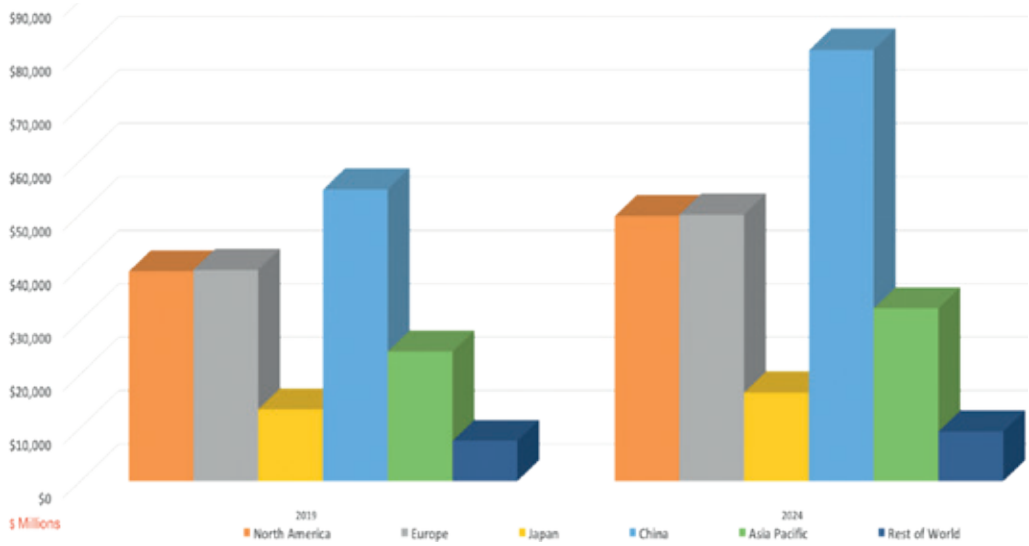
Infineon Technologies has inked a deal to acquire **Cypress Semiconductor** for $10 billion, the latest in a series of acquisitions of connectivity chip suppliers in the last few months.
Earlier, NXP announced it was acquiring Marvell's Wi-Fi and Bluetooth connectivity assets for $1.76 billion.

And in March, Nvidia said it was acquiring networking IC vendor Mellanox Technologies for $6.9 billion.
The common thread appears to be connectivity. Hassane El-Khoury, Cypress CEO, said in an interview recently that its Wi-Fi and Bluetooth connectivity chips for automotive and IoT could be attractive for potential acquirers, especially in the light of ON Semiconductor's acquisition of Wi-Fi chip vendor Quantenna Communications for just over $1 billion in cash.

Based on this, it seems that Cypress was certainly actively looking for suitors.

Source: EETimes

SALES BY REGION OF THE WORLD *Figure 1*



Source: Bishop & Associates

of living, and awoken the home market to modern goods and services.
Another example is found in Europe with its sovereign debt crisis, which will take years to undo.
The Conference Board said, "As China, India, Brazil, and others mature from rapid, investment-intensive 'catch-up' growth to a more balanced model, the structural 'speed limits' of their economies are likely to decline, bringing down global growth despite the recovery in advanced economies."
The shift of industrial output from the advanced economies to the emerging/developing economies is slowing. Certain industries and their subcontracted businesses (like the automotive industry and cable assemblies) will always remain local, and other industries have finished with whatever business transfers they were going to make between regions. As such, China's increasing share of the global cable assembly market will largely result from servicing its own home market.
Changing trade practices could also have a positive or negative impact the global cable assembly market.
In addition, the US and Europe/NATO are ramping up military spending to keep up with Russian and Chinese advances in hardware Conflicts in the Middle East, Eastern Europe, and Asia are all agitating the world order. With Russia and China behind many of these issues, there are concerns about having the necessary deterrent capabilities.

For a more detailed analysis of the world cable assembly market, please visit **Bishop & Associates** Inc. to obtain the new research report, World Cable Assembly Market 2019, available in late May 2019. This in-depth, 17-chapter report examines the global cable assembly market by region, market sector, and product type, with a close look at trends impacting this market, sales and growth forecasts from 2017-2023; market trends and statistics; related products; regional analysis; and much more.

IDEA

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