

# What trends offer opportunities on the market for electronics and electrical engineering?

Europe's electronics and electrical engineering sector is a large and attractive sales market. In 2016 it had a world market share of 14.6%. Legislation that strives for more fuel or energy efficiency has driven growth for electronics in the automotive, building and lighting sectors. Industrial production turns 'smart' and becomes more automated. An increasingly ageing European population and cost pressures on the healthcare sector have also increased the demand for electronic innovation in this sector.

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## 1. General trends in the electronics and electrical engineering sector in Europe

### Legislation and legal requirements continue to shape the sector

Overall, legislation mainly focused on environmental and security issues has increased the demand for intelligent and efficient products and solutions. A number of European Union (EU) Directives has been issued in the last few years that accelerate the development of renewable energy sources, electronic vehicles and electronic lighting in Europe.

Political measures are expected to continue driving the share of electronics in automotive in the short and long term. Following the example of the US, Europe may impose new directives to ensure personal safety, for example, by obliging the mandatory use of rear view cameras and an emergency call in vehicles.

As a developing-country exporter you can benefit from this trend as it drives the demand for electronic components and/or assemblies/subassemblies in a variety of products.

### Tips:

Familiarize yourself with the latest and pending European legislation through the [service of Euractiv](#).

Get more information on European Union policies and environmental trends possibly through international support organisations such as the Chamber of Commerce or CBI;

Meet the safety and quality demands by integrating a quality assurance programme in your production process;

Strengthen your competitive advantage by investing in new efficient electronics and in intelligent electronic solutions;

Partner with European original equipment suppliers (OEM) to co-develop efficient and sustainable solutions.

See [our study about buyer requirements in the Electronics and Electrical Engineering sector](#) for more information. It will also include tips.

## The Internet of Things (IoT) is a game changer

The Internet of Things (IoT) is an overarching development that affects all sorts of technological applications and devices, ranging from automotive to consumer electronics. It will have a fundamental impact on the life and work of human beings in the long term. The trend is driven by the desire of users to increase convenience, functionality and efficiency. The IoT basically means that data on the status of a system is detected in real-time and evaluated to optimize the efficiency of operations or to operate the system remotely.

In 2016, it was shown that small- and medium-sized enterprises in the industrial production sector have started to embrace this trend. Yet they also face challenges, as they have to acquire new competences in the area of IT that many do not have. In this context, component distributors see a chance to take on a more powerful role as a system integrator. They can offer the full range of components needed for IoT integration. This puts them in a stronger market position, contributing to filling the gap in competence of small- and medium-sized enterprises.

There are a variety of electronic components that enable technologies for IoT. Key components are field bus systems, cabling for data and information channelling, as well as electrical motors as actuators and of course software. These are product areas in which companies like yours have competences and are able to act as suppliers of the European market.

### Tips:

Strive to reach out and supply multinationals in your home market to build up a reference;

Attend trade fairs in Europe to connect with potential clients (for example small and medium-sized enterprises) to understand their demand characteristics.

## Increased importance of supplier reliability

Megatrends such as globalisation and consolidation drive substantial changes in the product supply chain. At the same time, this raises concerns of European manufacturers towards the increasing risk of international cooperation, such as supplier reliability and supply chain efficiency. Risks need to be measured and managed in order to keep the total cost of ownership (the indirect and direct costs of a product) at a reasonably (low) level.

In the short and long term, European original equipment manufacturers (OEM) will be increasingly looking for the most reliable suppliers and will try to eliminate risk through supplier contract and cost management. Reliability and efficiency become key priorities for successful cooperation. Cultural and geographical proximity and on-time delivery may shorten the acquaintance phase and turn a new and unknown supplier into a trusted partner more quickly.

In the long term, supply chains will continue to undergo changes, becoming more innovative, open to customisation as well as lean, fast, and flexible.

### Tips:

Work on your supply chain to be able to offer on-time delivery and stress this in your sales pitch;

Demonstrate cultural or if possible geographical proximity when targeting the European market.

Speaking relevant European languages can significantly improve the delivery process.

## **Growing opportunity for cooperation with developing countries**

While production costs in Europe are high, the fast development of markets outside Europe defines global trends and market needs.

In the short and medium term, high production costs in Europe are expected to intensify pressures on European manufacturers. Increasing labour and production costs in 'technology-rich' countries such as Germany, Switzerland, Finland or Sweden have driven production outsourcing to labour-rich countries and have generated a shift to Engineering & Manufacturing Services (EMS) providers.

As a developing-country exporter you will have a cost advantage by offering labour-intensive products, and you will benefit from the ability to supply better-priced electronics. In this context, developing countries such as Vietnam have started benefiting from a production shift away from China, as labour costs there are rising significantly.

There is also the chance that production will return to Europe in the future in the medium and long term as automation of machinery reduces the significance of labour costs; however, the trend of relocating away from Europe has been stronger thus far.

### **Tips:**

Analyse all your costs including production, marketing, logistics, insurance, and understand your liabilities and responsibilities.

Analyse the product market price levels in the target country.

## **Knowledge-sharing and access to industry-specific information strengthens developing-country exporters**

The growing importance of cooperation drives two-way knowledge sharing between OEMs in Europe and suppliers in developing countries, thus increasing the number of innovations across all application industries.

European countries are losing their image as global technological leaders, because other manufacturers are catching up by developing their technology.

In the long term, expertise and innovation may migrate to emerging countries, as the level of education in emerging or developing countries improves through two-way knowledge-sharing between mature and emerging markets. The declining interest of talented people in engineering in Europe will result in a shortage of skilled personnel.

As a result exporters like you will have the opportunity to become more competitive and introduce their own innovations to Europe in the medium to long term.

## Consumption in Europe grows

Through the penetration of new markets and the growing share of electronics in applications, the electronics and electrical engineering market in Europe is growing in the short term and is expected to continue to do so in the long term.

Semiconductors, which are widely used in numerous applications including energy, automotive, healthcare and other industrial segments, did well in 2015 Europe-wide, showing a high single-digit growth driven by sales in Germany, France and the UK. Electromechanical components also did well. In terms of growth rates, sensor and optoelectronics have done especially well according to the association FBDI, with a two-digit cumulated average growth rate over the twenty years from 1995 to 2015.

The relocation of the production of finished goods outside of Europe may have an adverse effect on the sales of electronic components and may benefit other production countries.

Western European markets remain the largest consumers of electronics and electrical engineering in Europe due to their population size, economic power, and sophisticated demand. After years of economic downturn the UK strengthens its position as second-largest market behind Germany. Spain seems to have stabilized its economic situation and starts growing again. This goes along with decreasing unemployment rates which, however, remain high, with around 20% in 2016.

It is best to target smaller Southern and Eastern European countries through large trade hubs in Western and Northern Europe.

### **Tips:**

Target mature markets from Western Europe with the biggest demand for E&EE within Europe;

Be aware of the high risk entering countries with negative GDP forecasts such as Greece;

Target trade hubs to supply smaller markets.

In 2015 Germany remained the key market for E&EE, benefiting from a technological edge, strong research and development and innovation in automotive, automation, energy, and other application markets. Research in the automotive, automation and medical industry including information and communication technology will be one of the central research themes in the next few years across Europe, thus remaining another sector with opportunities for electronic component suppliers.

### **Tips:**

Familiarize yourself with the latest trends and ongoing innovations in electronics and electrical engineering.

Invest into innovation, product customisation and start targeting new application markets such as the energy and medical industries, depending on your production capabilities.

## **Production in Europe rebounds: industries such as automotive and automation drive growth**

The automotive, automation, lighting, energy and medical industries are set to drive Europe's production of electronics and electrical engineering, in particular professional solutions and finished goods. Europe's production continues to rebound, benefiting from economic recovery within Europe as well as the USA.

The production of electronic components in the period 2015-2020 will be driven by the automotive, automation, lighting, energy and medical industries.

### **Tips:**

Enter European markets with better-priced proposition for labour intensive electronic solutions.

Consider supplying the largest Western European markets such as Germany, France, Italy, the UK, with electronic components, but also with customized electronic assemblies and solutions.

In the long term, a decline of production in Europe will be driven by the shift of production to lower-cost regions. The importance of Asian countries (excluding China) and other developing countries will continue to outpace developed countries such as Japan and European countries. Countries such as Vietnam benefit from increasing costs in China and production has started to shift from China to Vietnam.

### **Tips:**

Consider approaching European peers' local manufacturing units in developing countries.

Talk about your innovations, use open innovation opportunities such as intelligence centres in order to introduce your innovations and ideas.

Learn from European suppliers to strengthen your expertise.

Establish alliances with universities and invest in the education of your workforce and in the improvement of their skills, as well as in the technological capacities.

## **2. Market trends and opportunities in relevant application industries**

**Automotive industry remains a large consumer of electronics and electrical**

## components

In 2015 electronics made up about 50% of a car's value including the software, and this will increase in the upcoming years. Around 85% of innovations in cars happen in the area of microelectronics and software. This includes motor management systems, sensors, and driving assistance systems. Drivers for these innovations are mainly regulations and a desire to reduce air pollution, or improve fuel efficiency, comfort and security, as well as the need for product differentiation among original equipment manufacturers, especially in the premium car sector. Legislation such as Euro 5 and 6, striving for less air pollution, has had the largest effect on the industry in recent years.

Overall, the market for electrical mobility in Europe remains sluggish as electrical car prices remain high and there has been no other incentive to boost demand. However, the German government has set up a billion-euro e-mobility incentive scheme in 2016 that aims to drive growth of the demand for electrical cars and the build-up of charging infrastructure. Even a stronger driver of growth for European manufacturers is China, which is pushing its market development for e-mobility and which is the largest sales market for these companies.

Due to the fact that more electronics are built into cars, this creates opportunities for electronic manufacturers to sell their products in the automotive industry as well. However, higher product requirements are relevant here, in regards to quality, durability, product life, and safety. This is a challenge, and car original equipment manufacturers currently strive to make potential suppliers aware of these requirements. It comes with the need for closer cooperation between OEMs and suppliers, especially in the area of research and development, to reduce risks.

In 2015, 23 million motor vehicles were built in Europe which was equivalent to 25% of the global production. The sector has a constantly large demand for all sorts of electrical and electronic components, ranging from active to electromechanical components. Due to the vastly diversified supply chain the sector offers a broad range of opportunities for manufacturers from developing countries like you, both in the short and long term.

### Tips:

Reach out to original equipment manufacturers to ensure that you meet their standards in regards to quality, durability, product life time, and safety of electronic and electrical components;

Partner with original equipment manufacturers who produce ultra-low-cost economical cars (for example [Dacia](#)) and consider expanding your product range for this specific application.

## Industry automation turns smart

The re-industrialization initiative in the USA has driven growth and demand for sophisticated automation machinery from Europe, especially in Germany, in 2015 and 2016 and is expected to do so in 2017 as well. For the German electrical and mechanical engineering industry the USA is the most important export market. It also helps to partly compensate for the lower demand from China in 2016.

Industry automation has led to an increasing integration of IT, mechanical and electrical engineering. The 2016 Hanover Fair has shown that small- and medium-sized enterprises have also started following the smart industry trend consistently. The trend has started covering all fields of industry automation.

European OEMs have started separating high-tech and low-tech, or high-price and low-price electronic product parts. In the automation industry, a split of hardware (low-price) and software (high-price) will occur as a result of retaining intellectual property rights, for example developing software in-house while purchasing hardware

from developing-country suppliers. Germany, but also France benefits from its strong expertise in industrial processes, intelligent machinery, drives, sensors, actuators, controls and system integration.

This also opens up business opportunities for companies like you, as a supplier of hardware components to European and especially German manufacturers in the short and long term.

### **Tips:**

Actively participate with a booth in major industrial fairs such as the annual [Hanover Fair](#), the world's largest industry fair, or the [PCIM Fair](#), Europe's leading fair for power electronics, intelligent drive technology, and power or energy management to show your products and build up credibility in the industry;

Get more information on all potential customer groups possibly through international support organisations such as the Chamber of Commerce or CBI.

Analyse customer needs and market pre-conditions by actively connecting with potential partners and customers.

## **Energy industry benefits from electronics**

Energy savings and energy efficiency are continuously boosted by improvements and innovations of measurement and control equipment, a trend which continued in 2016. Investments in energy-saving technology that is mainly based on electronics and software have a multiple leveraging effect. This becomes especially relevant in the industrial sector where savings increase competitiveness and provide room for further investments.

Germany's energy transition from fossil fuel-based energy production towards renewable energy-based production increases the need for electronic smart grid applications that manage the processes of a decentralized energy supply. Other European countries such as the UK are also pushing for a higher share of renewable energy production.

This increases the demand for high-performance power electronics, energy storage solutions, and smart metering which was a focus of the world-leading fair [Energy 2016](#). There is a need for energy distribution controllers and energy storage solutions that are reliable and secure, and that facilitate flexible energy usage. The importance of smart meters with two-way communication between the meter and central system is set to increase. The development of energy storage solutions is ongoing, mainly focusing on size and power capacity.

Exporters like you can benefit from these new markets through co-design, as well as by offering your own know-how, design, hardware and software to European peers, since Europe currently has few solutions in place for, for example, smart meters.

### **Tips:**

Participate in the smart grid pilot projects through co-design;

Familiarize yourself with the ongoing and planned smart grid projects in all European countries;

Specialize in power electronic components for smart metering;

Consider either cooperating with companies that produce smart metering solutions, or offering your own solutions, including hardware (complete or assemblies), software, solution design and know-how;

Attend trade fairs in Europe to connect with potential clients to understand their demand characteristics.

## Cloud services/big data management more important

Part of the Internet of Things trend is the generation of huge quantities of digital data that need to be or are digitally captured, stored, and processed. This drives the demand for specialized software applications, but also the demand for hardware, especially storage and processing hardware such as high-performance servers. For 2016 this includes control electronics and embedded boards primarily, but also reliable and efficient power supply/electronics.

### Tips:

Attend trade fairs in Europe to connect with potential clients (for example small and medium-sized enterprises) to understand their demand characteristics.

See our study about [providing IT outsourcing \(ITO\) and business process outsourcing \(BPO\) services in Europe](#) for more information.

## Buildings - intelligent and energy efficient

The integration of electronics into houses and homes offers a higher level of energy efficiency, comfort, and security. This trend has been driven by legislation to reduce emissions in the atmosphere and reduce dependencies on fuel imports, and by technological innovations that have created new opportunities for comfort, functionalities, or security. The digitisation of buildings continued in 2016.

At the same time there exists a large potential for the renewal of electrical infrastructure in buildings in Europe. Today around 70 electrical devices are used in households while 30 years back only around 8 devices existed in an average household. Cabling and security devices are subject to renewal as they are exposed to excessive loads.

European governments strive to bring the energy consumption of buildings down and to reduce the CO2 footprint. Currently, buildings are responsible for around 40% of the national energy consumption and one third of CO2 emissions. It is the plan of the government to reduce these emissions to 0% in 2050. So far the focus has been on residential homes. This means public buildings and commercial buildings are not included, yet. This shows the remaining large potential of the market.

Energy consumption of home appliances such as fridges can still be reduced by 25% through the replacement of 10-to-15-years-old equipment. In the last 10 years the replacement of large household appliances has led to energy savings in this field of 65%.



### **Tips:**

Analyse your product offering, assess your strengths and weaknesses, and evaluate customer demands;

Identify your addressable market by narrowing the target customer group based on your product specifications and possible applications;

Create a unique selling proposition, by adapting regional products to the global demand and by looking for possible applications in new markets to your existing products.

## **Lighting moving towards LED**

Lighting has experienced a revolution in regards to the evolution of LED technology, basically turning glass manufacturers into semiconductor-based chip manufacturers. Still, the classical bulb business continues to dominate the manufacturers' portfolios, even though it becomes less significant from quarter to quarter. At the end of 2016 LED technology is expected to make up around 45% of the lighting market; in 2020 this will be around 70%.

Key to this revolution has been the superior energy efficiency of LEDs compared to the previous generation of lighting based on bulbs. The change in technology has taken broad effect, also leveraged by favourable politics that strive to reduce energy consumption and emissions. Due to their superior functionality LEDs have started to replace xenon and halogen lights in the automotive sector.

Demand for LED technology is high, not only as bulb, xenon, or halogen substitute, but also as a basic technology for displays. Production of LEDs has partly shifted away from Europe in order to reduce costs. This opens up opportunities for suppliers from developing countries who are active in the production of LEDs.

### **Tips:**

Make sure that you meet the purchasing standards of European clients and provide offers at low cost

Have a look at [LED specific standards and regulations](#).

## **Health technology adapts to future needs**

Because of the ageing population in Europe, the level of chronic diseases is increasing. This requires efficient health management in all areas of life, both at the hospital, the private clinic and at home. The aim of this is to stabilize people's conditions, to ensure they can remain independent as long as possible and to prevent emergencies. Medical and technological innovations enable us to detect diseases earlier and to treat them more individually than in the past. This helps make the increased need for medical care affordable.

Applications that offer solutions for these trends are strongly based on electronic devices, also known under the terms 'e-health' and 'telemedicine'. There is market potential for a multitude of components and suppliers such as yourself, in the short and long term.

## Tips:

Attend trade fairs for electronic and electrical components and medical technology to connect with potential customers and understand their requirements.

Have patience when building up business ties with European partners. Building trust is a key in this context.

Show reliability in the earliest possible stage.

## Consumer electronics and wearables - a niche in terms of market size

Consumer electronics, including white goods and wearables, are becoming smarter as a result of product innovations, driven by the demand for energy efficiency, sophisticated demand and the need for product differentiation. This trend also involves increased interconnectivity between products. Production has decreased over the years in Western Europe or Europe overall, but has also shifted to Eastern Europe, especially Poland. Poland is the largest manufacturer of white goods in Europe.

Energy efficiency and the desire for more functionality and comfort have driven the demand for electronics in the short term and will continue to do so in the long term. The demand is driven by an overall increased integration of control electronics that enable accurate operations. It includes a variety of active and passive components as well as electromechanical and power supplies, but especially embedded systems and sensors.


Consumer electronics and wearables provide market opportunities for exporters like you in Europe; however, the market is not very large.

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