

# CBI Product Factsheet for Semiconductors for Automotive Application in Hungary

# 'Practical market insights on your product'

Hungary is a rapidly developing economy in the European Union. It is very strong in the manufacturing of automotive parts, motors and vehicles. Hungary is one of the key cooperation partners with Western Europe and many global brands in electronics and automotive industries have local production facilities in the market. Both R&D and Capital investments are growing in Hungary, in particular in the automotive sector. DC exporters will find opportunities in supplying the rapidly developing automotive industry through local authorised distributors.

# **Product Definition**

Semiconductors are materials that have electrical conductivity between that of a conductor and that of an insulator. They can display a range of useful properties such as passing current more easily in one direction than the other, variable resistance, and sensitivity to light or heat. Because the conductive properties of a semiconductor material can be modified by the controlled addition of impurities or the application of electrical fields or light, devices made with semiconductors are very useful for the amplification of signals, switching, and energy conversion. They are the foundation of modern electronics and are found in virtually all electronic devices today. They are particularly used in:

- Transistors
- Solar cells
- Light-emitting diodes (LEDs) and
- Integrated circuits

Semiconductors are applied in the production of all electronic equipment and assemblies for industrial, automotive and other applications.

Semiconductors are grouped under HS codes that start with 854221, 85429, 85044, 85411, 85412, 85413, 85415, 85419, 85319020, 85044050, 901380, and 901390.

Both brand names of semiconductors and the product quality are important to the buyer. Some of the international suppliers of semiconductors are: <a href="NXP Semiconductors">NXP Semiconductors</a> (formerly a division of Philips), <a href="Infineon Technologies">Infineon Technologies</a> (subsidiary of Siemens AG), <a href="Vishay Semiconductors">Vishay Semiconductors</a> and <a href="STMicroelectronics">STMILAB</a> is the Hungarian company active in automated semiconductor and PV characterisation equipment represented worldwide.





Source: Fotolia

#### **Product Specifications**

#### Quality:

High product quality and compliance with international and the European standards on safety, as well as national legislation and practices are key for all European companies.

The highest levels of quality can only be shown by following the ISO 9001, ISO/TS 16949 and ISO 26262 (for the automotive application) standards. The materials used, especially hazardous substances, have to comply with RoHS and must also fulfil REACH requirements (see "Buyer requirements" in this document).

In addition to the above mentioned standards, industry specific standards set by <a href="JEDEC">JEDEC</a> (Joint Electron Device Engineering Council) for general semiconductor devices and <a href="AEC">AEC</a> (Automotive Electronics Council) for semiconductors used in the automotive industry are required by European (and Hungarian) customers. These standards define several stress tests, which simulate the lifetime of semiconductors and each customer defines the specific stress tests that must be successfully passed.

Overall, European (and Hungarian) customers expect very low defect rates for semiconductors. When used in commercial or industrial applications, defect rates must not exceed 50 ppm, while integrated circuits used **in the automotive industry must be supplied with defect rates of close to 0 ppm.** 

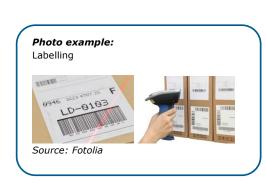
Key specifications for semiconductors include the voltage, current and frequency of semiconductors. To answer the demands of the current mega trends of 1) energy efficiency, 2) mobility, 3) security, new generation semiconductors improve energy efficiency, reduce operating noise, enable efficient digital power conversion, enable the building of microcontrollers, and support the security of people's lives.

# Labelling:

Products marketed in Hungary must be labelled in accordance with EU requirements, i.e., must provide product information and protect consumers' health, safety and interests.

The label information must also be electronically readable. Examples of suitable label technologies include:

- Bar Codes
- Data Matrices



Radio Frequency ID

Semiconductors are typically labelled with the description of content, including the following types of information:

- type of product,
- model type,
- quantity,
- net and gross weight (in kilograms),
- supplier/manufacturer name,
- supplier/manufacturer location,
- serial number,
- various environmental logos,
- country of origin,
- · moisture sensitivity level,
- temperature,
- hours,
- sealed date.

#### Packaging:

- Packaging for products marketed in Hungary, must meet certain EU requirements. Make sure that your packaging:
  - o has minimal weight and volume;
  - has low levels of hazardous substances and materials in the packaging material;
  - is recyclable.
- Packaging must protect products from damage, moisture and protect consumers from possible injuries. The supplier must test the semiconductor packaging for moisture sensitivity. The testing procedures are outlined in standards <u>EIA/JEDEC A112-A</u> and <u>EIA/JEDEC A113-B</u> and result in moisture sensitivity levels ranging from 1 to 6:
  - JEDEC level 1 corresponds to a package that is not moisture sensitive.
  - o Any package denoted level 2 or higher requires removal of moisture.
- Semiconductors are usually packed in one of three primary component containers: **Stick magazines** (also called shipping tubes), **trays, or tape-and-reels**.
  - Stick magazines are constructed of rigid clear or translucent polyvinylchloride (PVC) material. They are extruded in outlines that meet current industry standards and can be used to feed automated assembly processes. Stick magazines are usually packed and shipped in multiples of single magazines
  - Trays are constructed of carbon-powder or fibre materials that are selected according to the maximum temperature rating of the specific tray. They are moulded into rectangular JEDEC standard outlines, containing matrices of uniformly spaced pockets. The pocket protects the component during shipping and handling and the spacing provides exact component locations for standard industry automated-assembly equipment.
  - The tape-and-reel configuration is designed for feeding components to automatic-placement machines for surface mounting on-board assemblies. This configuration can be used for all SMT packages and provides component lead isolation during shipping, handling, and processing. The complete configuration consists of a carrier tape with sequential individual cavities that hold individual components, and a cover tape that seals the carrier tape to retain the components in the cavities. In most cases, single reels of components are inserted into intermediate boxes before shipping.

#### **Buyer Requirements**

To assure the durability and safety, products *must* comply with relevant **EU regulations and standards**, since Hungary is one of the 28 EU member states. Compliance with 1) *must* requirements, and 2) *common* requirements, is a basic necessity for *all exporters* in the electronics and electrical engineering sector. Below you will find all standards that apply to **semiconductors**. Familiarise yourself with guidelines on the application of all *must and common* requirements.

# Requirements you must meet

#### 1. CE marking

- For the intra-European trade, semiconductors must be marked with the CE mark, which shows that the product was assessed before commercialisation and that it meets EU safety, health and environmental protection requirements. For semiconductors, the most important Directives on CE marking are:
  - Electromagnetic compatibility (EMC Directive 2004/108/EC).
  - Low voltage equipment (LVD 2006/95/EC),
  - Ecodesign for Energy related products (Directive 2009/125/EC), which are not standards but implementing measures,
  - RoHS (see below).

# **Considerations for action:**

- Apply for CE marking for all your products, **before** approaching potential customers in Hungary.
- The <u>European Commission page on CE marking</u> is a useful starting point to find out how the legislation on CE marking is relevant to you; it illustrates the key steps you need to take to comply and have your products CE marked.
- Check information for relevant standards and guidelines on the application of LVD, EMC and Ecodesign in the <u>Buyer Requirements</u> section on CBI's Market Intelligence platform.
- Familiarise yourself with standards that apply for semiconductors <u>here</u> (LVD) and here (EMC)
- Familiarise yourself with implementing measures on ecodesign here
- Read more about CE marking for <u>low voltage equipment</u> and <u>electromagnetic</u> <u>compatibility</u> in the EU Export Helpdesk

# 2. Chemicals

• Use of certain chemicals is restricted by the EU and regulated through several Directives and Regulations. Suppliers of semiconductors must be aware of the buyers' expectations in the use of certain substances.

**Considerations for action:** Exporters of electronic components to Hungary have to meet the requirements under both RoHS and REACH.

• Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS). The Directive sets maximum levels for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) in electronic equipment (0.01% by weight for cadmium and 0.1% for the other substances). The Directive covers all electronic components with the exception of the products mentioned in <a href="Annex III">Annex III</a> to the Directive. Since 2013, CE marking has been required in relation to RoHS compliance of final products. This includes technical documentation and a declaration of conformity.

#### **Considerations for action:**

- Make sure that you provide the Hungarian buyer with all information required in relation to chemicals used in semiconductors. Fill out this information in the form required by your buyer, e.g., by providing information in Material Safety Data Sheets (MSDS) or software in which you declare the chemical content of your product (e.g. <u>BOMcheck</u> – a collective data system developed by a group of large electronics companies to collect chemical composition information from suppliers).
- Provide the Hungarian buyer with technical documentation and a declaration of conformity for the products supplied.
- **REACH Regulation.** This legislation restricts the use of certain dangerous chemicals (as per <u>Annex XVII of the Regulation</u>) and sets requirements on indicating information about the chemicals used. Manufacturers are required to provide information on the properties of chemical substances used to their buyers.

**Considerations for action:** List all chemicals, including raw materials and additional materials, used in your production process. Check the candidate list of <u>Substances of Very High Concern</u>.

Waste of Electrical and Electronic Equipment (WEEE). If you want to export
semiconductors to Hungary, be aware that your EU/Hungarian producers are obliged
to participate in product take-back schemes. This does not directly affect exporters
from developing countries, but specific requirements on the design may be set in
order to facilitate the reuse and recycling set out by WEEE.

**Considerations for action:** To have a better understanding of WEEE requirements, familiarise yourself with information published in the EU Export Helpdesk.

#### **Common Buyer Requirements**

Quality management systems (QMS). If you plan to export to Hungary, all products must meet buyers' quality demands. ISO 9001 and 14001 are designed to make sure that the manufactured and/or exported products to Hungary meet the needs of customers. For automotive application, components within an assembly, subassembly and finished goods have to meet quality demands outlined in ISO/TS 16949 QMS. Compliance VDE (a European standard with several variations) is often required by EU/Hungarian buyers.

# **Considerations for action:**

- Apply for ISO 9001 as quickly as possible and plan for ISO 14001. Understand your target customers' requirements and if you plan to target automotive industry, apply for ISO/TS 16949.
- Familiarise yourself with VDE requirements. This requirement is particularly important when going to the European market.
- Consider forming a Quality Assurance team within your company that will assure the high product quality required by EU/Hungarian buyers.
- Corporate Social Responsibility (CSR). EU buyers increasingly look for products that have been manufactured with due respect for human rights, labour conditions and the environment. Bigger EU companies even develop their own CSR policies and require the suppliers to conform to these requirements. In particular, worker health and safety are sensitive topics in Europe and buyers want to avoid reputation loss.

#### Considerations for action:

Understand what CSR policies are required by your customers by checking websites
of electronic companies in Hungary.

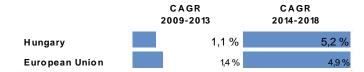
- An important initiative for the electronics sector is the <u>EICC Code of Conduct</u>. Most large electronics companies have implemented this code and require their suppliers to act in accordance with it.
- <u>SA 8000</u> is a certification standard for social conditions. Although this certification is not a requirement, the standard is publicly available, so you may want to be aware of the most important issues.
- Consider implementing OHS Occupational Health and Safety that deals with aspects related to labour conditions. These requirements are not mandatory, but they will definitely give you an advantage over other DC exporters.

#### **Macro-Economic Statistics**

Cooperation with the Hungarian companies opens new growth opportunities to DC exporters. The economy and financial health has been rapidly developing in the last 5 years and the country's GDP growth is set to outperform the European average GDP growth. The country's economic growth is primarily driven by the automotive industry.

Hungary is expected to have annual growth of approximately 5.2% (Compound Annual Growth Rate) in 2014-2018, but is forecast to see a decline of 0.5% in 2014 compared to 2013 due to "uncertainties associated with the resolution of foreign-currency-denominated mortgages" (Source:IMF). The recovery from recession in early 2013 is expected to be modest in 2014 due to weaker investment and low employment among low-skilled workers. (Source: OECD)

Figure 1: GDP (current prices) Compound Annual Growth Rate (CAGR) for 2009-2013 and estimate for 2014-2018 for Hungary and the EU

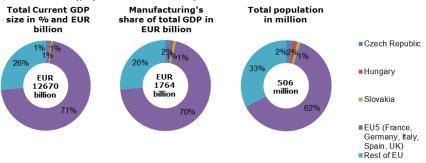


Source: IMF 2014, World Economic Outlook Database

Hungary has a negligible market share of total GDP and of total manufacturing in Europe. However, compared to other Eastern and Central European countries, Hungary holds a significant economic position.

In terms of population, Hungary contributes only 2% to the total EU population.

Figure 2: Key 2013 macroeconomic indicators for Hungary, the EU and selected countries, in € billions (population in millions)



Source: IMF and OECD 2014

Hungary is one of the key producers of vehicles and engines for the European market. Suzuki, Volkswagen, Nabi, Daimler and General Motors Europe all have automotive plants in Hungary. Opel, Audi and Daimler have engine production facilities in Hungary. Knorr-Bremse, Bosch, General Motors, Continental and Audi not only manufacture in Hungary, but they also have R&D facilities. 90% of vehicles manufactured in Hungary are exported to Germany, Italy, France and other markets in and outside Europe. Hungary is also an important producer of electronic equipment and components. Global OEMs such as Samsung, Bosch, IBM, Electrolux, SEMILAB are all located in the territory of Hungary.

The automotive industry in Hungary will enjoy solid growth. In the EU, the car assembly industry is set to grow by 11% through 2019, while Hungary is "in a much more comfortable situation", driven by the following:

- Creation of local R&D centres will gear the Hungarian automotive industry, in particular in the high-value-added activities within the automotive industry.
- R&D investments have significantly increased recently, in particular investments targeting premium car production. (Source: PricewaterhouseCoopers Hungary)

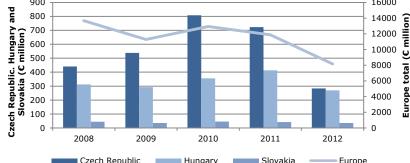
#### **Trade Statistics**

#### **Production and consumption**

A strong cooperation partner with Western Europe, Hungary is set to further benefit from growing investment activity in the automotive industry. Production and the market size of semiconductors dipped in 2012, but is expected to see a modest growth in 2014 and to fully recover in the upcoming years, driven by the growing production output of vehicles and automotive parts.

900 16000 and 800 14000 700 12000 600 10000 500

Figure 3: Production of semiconductors in Hungary, Czech Republic and Slovakia, value in € million



Source: Eurostat Prodcom (May 2014)

• Hungary is a significant cooperation partner for Western Europe in electronic components and electronic equipment. Hungary accounts for 25% of total production of industrial electronics in Central and Eastern Europe. Electronics production in Hungary contributes to 22% of total in-country manufacturing output.

Considerations for action: Actively pursue the cooperation opportunities in Hungary by supplying local manufacturers of electronics with semiconductors. Also consider an alliance with local manufacturers of semiconductors or other electronic components.

Figure 4: Apparent consumption of semiconductors in Hungary, Czech Republic and Slovakia value in  ${\bf E}$  million

\*Apparent consumption (Production + Imports - Exports) Source: Eurostat Prodcom (May 2014)

After a dip in 2012 due to the recession, the demand for semiconductors is expected
to grow in the next 5 years. The growth in demand will be particularly driven by the
automotive application – one of the key industrial sectors in Hungary. One of the
most important suppliers of vehicles, motors and automotive parts in Europe,
Hungary expects a further rise in production capacity. For example, the <u>Takata</u>
<u>Corporation</u> has invested €68.3 million in a new airbag production plant in Budapest
that is to be opened in October 2014. <u>Knorr-Bremse</u> has just invested €20 million in
a new production and development facility for brake components for commercial
vehicles

**Considerations for action:** Depending on your product offering, target the manufacturers of vehicles and automotive parts in Hungary. Find out who are the major local suppliers of electronic components to this industry and actively approach the players.

# **Import and export**

Market experts expect a further growth in international trade with developing countries, driven by the importance of outsourcing. DC exporters will benefit from the near-shoring trend by targeting local OEMs in the automotive industry in Hungary. Total imports and exports of semiconductors in Hungary declined in 2013, recording -14% and -41% respectively. Imports of semiconductors from developing countries increased by 33% in 2013, but exports to EU+EFTA countries declined by 46% in 2013.

Figure 5: Import of semiconductors in Hungary in 2013, %

	Share of imports from DCs of total in-country imports, 2013	2012/2013 growth of imports from DCs	2012/2013 growth of imports from EU+EFTA	2012/2013 decline of total imports
Imports	7.1%	33%	4%	-14%

Source: Eurostat (May 2014)

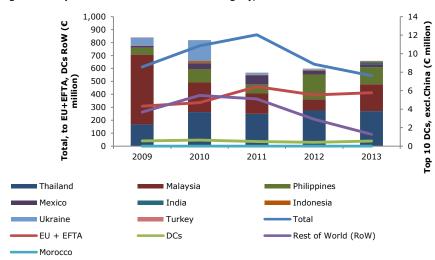


Figure 6: Imports of semiconductors to Hungary, value in € million

Source: Eurostat (May 2014)

- Hungary's import of semiconductors from developing countries saw 33% growth in 2013, while total imports of semiconductors declined. After China, Thailand, Malaysia and the Philippines are the biggest exporters of semiconductors to Hungary. In 2013, Malaysia, India, Turkey and Indonesia recorded significant growth. Decision Etudes & Conseil consultants foresee the importance of these Asian countries (excluding China) and other developing countries growing in terms of the production of electronic components, driving international trade in 2012-2017:
  - China will remain the largest electronics (and semiconductor) manufacturer, but its production share is expected to decline due to rapidly rising labour costs
  - Other Asian countries are expected to see the highest growth in electronics production, driven by the trend to relocate electronic plants from China to adjacent countries with lower production costs.

# **Considerations for action:**

- With the growing importance of near-shoring (countries within the European Union that have low-cost production possibilities), it is recommended to approach major supplying countries such as Hungary. Work on minimising the entry barriers and maximising your competitiveness. To achieve this ensure that you have:
  - o a value proposition,
  - o a product that answers the european quality standards,
  - o knowledge of the local language and/or outstanding business english,
    - good understanding of european business culture.

Figure 7: Export of semiconductors from Hungary in 2013, %

	Share of exports to EU-EFTA of total in- country imports, 2013	2012/2013 growth of exports to DCs	2012/2013 decline of exports to EU+EFTA	2012/2013 decline of total exports
Exports	83%	21%	-46%	-41%

Source: Eurostat (May 2014)

600 400 Total, to EU+EFTA, DCs RoW 500 300 400 300 200 es countri 200 100 100 E 9 0 о 2010 2012 2013 2009 2011 Germany UK Italy Austria Netherlands Romania Poland Portugal Slovakia Total Rest of World (RoW) DCs

Figure 8: Exports of semiconductors from Hungary, value in € million

Source: Eurostat (May 2014)

 The declining value of exports of semiconductors in the last 5 years was impacted by the economic recession in 2012 and early 2013. Exports to Portugal and Slovakia remained stable and recorded double-digit growth in 2013. Slow exports of semiconductors in Hungary are also explained by the high rate of in-country consumption of semiconductors in growing industrial production facilities.

**Considerations for action:** Support local industrial production in Hungary, since there are limited opportunities in re-exports of semiconductors through Hungary. Find out who are the local authorised distributors of semiconductors and approach them.

# **Market Trends**

- E-Mobility and renewable energy, electronic lighting, advanced manufacturing and big data are the top growth drivers for the semiconductor industry:
  - E-mobility and renewables drive the demand for more efficient and new generation semiconductors.
  - Electronic lighting has substituted traditional lighting that is already banned in Europe.
  - Advanced manufacturing creates demand for more intelligent products with the integration of small processors with high performance and low energy consumption.
  - Big data requires more advanced data processing and analysis, and secure storage solutions.
- The following semiconductors are core to many applications that answer the aforementioned trends:
  - o sensors
  - o LEDs
  - o processors
  - o memories
  - o controllers.

**Considerations for action:** Depending on your production capabilities, build your product proposition around the following product groups: sensors, processors, memories, controllers and LEDs. Consider diversification of your products based on different applications.

 The use of semiconductors in the automotive industry is set to increase, as "connected car" applications will drive an increase in semiconductor use in vehicles by 8 to 10% annually over the coming years. Experts expect body electronics, chassis, safety and energy-related technologies to provide most of the semiconductor-related revenue in automotive applications. (Source: KPMG)

**Considerations for action:** Actively pursue opportunities in the automotive application. Find out where automotive production facilities are located in Europe and target these regions through authorised semiconductor distributors.

R&D investments in the automotive industry are growing rapidly in Hungary.
Many multinational companies such as Audi, Bosch, Knorr-Bremse, ThyssenKrupp, Arvin Meritor, Denso, Continental, Visteon, WET, Draxlmaier have set
up research centres in Hungary. Bosch is expected to take a leading role in
the automotive industry innovation capacity in Hungary. R&D investments in
premium car production are growing at a faster rate. Thus, Hungary is in a
good position to grow the in-country production further by means of highvalue-added activities. Collaboration between suppliers, manufacturers,
universities and research institutes is expanding and becoming more
significant. (Source: PWC)

**Considerations for action:** Consider partnering with global companies active in the automotive industry. Find out what companies have initiated research into high-value-added areas and actively contribute to the R&D process through cooperation. Actively participate in innovation forums in Hungary and share your development ideas in order to attract the attention of local players.

 The traditional semiconductor business is highly consolidated and has growth challenges (the long-term growth rate is set to decline). Value-added business in semiconductors is referred to as "More than Moore" (by adding new features such as more current, higher voltages, faster switching instead of just expanding the number of transistors on a chip) and it is set to grow twice as fast as the traditional business. (Source: Roland Berger)

**Considerations for action:** Continue innovating and investing in value-added semiconductors by adding new features to transistors. If it is not possible to develop your own capabilities for advanced semiconductors, consider a strategic alliance with high-end manufacturers of semiconductors.

• The shift to the next generation of semiconductors (450mm wafer) will have significant impact on the industry. This move requires huge investments and Intel, Samsung, TSMC, Globalfoundries and IBM have already made first investments. The EU supports 450mm wafer production and there are five pilot lines located in Europe. (Source: Roland Berger) Experts believe that a raw material transition from silicon based chips to carbon nanotubes or grapheme is inevitable, as the ability to scale silicon to 10 nanometers and below is diminishing. (Source: KPMG)

**Considerations for action:** Since the shift to the next generation of semiconductors requires huge investments, consider cooperating with one of the advanced semiconductor producers.

For more information on market trends, please refer to <u>CBI Trendmapping for</u> Electronics and Electrical Engineering.

#### **Market Channels and Segments**

• The importance of authorised distributors is growing in Europe. OEMs are increasingly shifting the multi-partner cooperation approach to a single-

provider. An authorised distributor is the core element in the supply chain. Besides there are EMS suppliers that provide value-added services:

- o resolving complex logistics problems,
- o providing local support services,
- o sourcing hard-to-find components,
- o providing small volume procurement,
- o minimising costs and saving time for OEMs/ODMs.

Hungary accommodates a number of EMS providers that provide both mass production facilities and smaller plants that focus on more specialised manufacturing.

**Considerations for action:** Find out who are the leading authorised distributors and EMS providers in Hungary and consider partnering with them. Zollner, Scanfil, Seidel, Melecs, Videoton are some of the *EMS suppliers* present in Hungary.

Internet blogs are another new sales channel for semiconductor suppliers who
want to attract high-end customers. Manufacturers use the blog to showcase
their expertise by posting technical topics and discussing them. This enables
direct interaction with a customer's design team. This approach has proven
successful in many markets.

**Considerations for action:** Consider specialised internet blogs in demonstrating your professional skills and experience. You can also talk about your innovations, through intelligence centres in order to introduce your company and ideas.

For more information on market channels and segments, please refer to <u>CBI</u> <u>Channels and Segments for Electronics for Electronics and Electrical</u> <u>Engineering</u>.

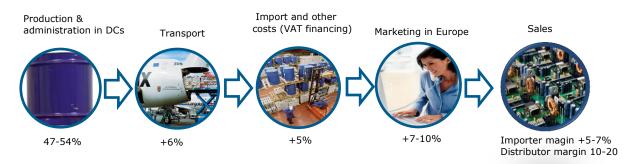
#### **Price**

Semiconductors have a wide price range, from 0.05 to 10 in Europe, depending on the specifications and application. Suppliers that are present in several European countries have harmonised their prices; any differences in pricing may occur because of a difference in logistics, taxes and other local costs.

Semiconductors	OEM volume price range, €
Integrated circuits	0.30-10.00
Transistors and diodes	0.05-5.00
LEDs and LCDs/assemblies	0.10-5.00 (€5 refers to a LED/LCD assembly)

Be aware of different costs and value chain margins that add up to the product price. Production and administration costs of the manufacturer is usually 47-54% of the end price (OEM volume price). Production and administration costs should include all raw material costs, development, labour, and other fixed and administration costs. To develop a unique selling proposition, DC exporters will have to understand own costs, liabilities and responsibilities, and analyse product market price levels.

#### Figure 9:



# **Field of Competition**

See CBI Market Competitiveness for Electronics and Electrical Engineering and CBI Buyers' Black Box, as the market competitiveness of semiconductors in Hungary does not differ significantly from this general overview.

#### **Main Sources**

- Eurostat, URL: http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home
- Eurostat Prodcom, URL: http://epp.eurostat.ec.europa.eu/portal/page/portal/prodcom/introduction
- Organisation for Economic Co-operation and Development (OECD), URL: http://www.oecd.org
- International Monetary Fund (IMF), URL: http://www.imf.org/external/index.htm
- Hungarian Investment and Trade Agency, URL: http://www.hita.hu
- KPMG Global Semiconductor Outlook, published in December 2013
- Opportunities and Challenges Beyond Moore's Law, Roland Berger, February 2014
- Decision Etudes & Conseil, URL: http://www.decision.eu/
- Distributors' and Manufacturers' Association of Semiconductor Specialists, URL: <a href="http://www.dmass.com/">http://www.dmass.com/</a>
- The European Semiconductor Industry Association (ESIA), URL: http://www.eeca.eu/esia/home
- Other open sources such as Wikipedia

#### More information

CBI market information: Promising EU export markets.

EU Expanding Exports Helpdesk - <a href="http://exporthelp.europa.eu">http://exporthelp.europa.eu</a> - go to 'trade statistics'. Eurostat - <a href="http://epp.eurostat.ec.europa.eu/newxtweb">http://epp.eurostat.ec.europa.eu/newxtweb</a> - statistical database of the EU. Several queries are possible. For trade, choose 'EU27 Trade Since 1995 By CN8'. Use the guide 'Understanding Eurostat: Quick guide to easy comext'

(http://epp.eurostat.ec.europa.eu/newxtweb/downloadobject.do?keepsessionkey=true&fil enameOut=User quide EASY Comext EN 2 0 1.pdf&mimeType=application/pdf&object <u>ID=2567&objectType=LOB&disposition=attachment</u>) for instructions. International Trade Statistics - <a href="http://www.trademap.org">http://www.trademap.org</a> – you have to register

This survey was compiled for CBI by Global Intelligence Alliance in collaboration with CBI sector expert Günther Fandrich

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