

THE EUROPEAN ELECTRONIC MANUFACTURING SERVICES INDUSTRY

A Strategic Study Of The European EMS Industry

2010 - 2015

The Complete guide to the European Electronic manufacturing Services Industry

The European Electronic Manufacturing Services (EMS) Industry is forecast in 2011 to increase by 6.4% over 2010 across total Europe. However, the rate of growth 2011 versus 2010 in Western Europe is expected to be 2.7% and for Central & Eastern Europe and other nearby low cost countries it is expected to be 9.2%. As we forecast in the 2009 edition, the industry which suffered reductions in revenues, during the 2008-9 recession has recovered somewhat during 2010 and early 2011. We expect that total revenues in 'CEE and Other' to be back to 2007 levels by 2012 but revenues in Western Europe are unlikely to reach those of 2007 within the time frame of this report. We do expect growth in both the Western European and CEE & Other regions across the time frame of the report but the economy of many major Western European countries has slowed in recent months and the forecast for Gross Domestic Product (GDP) in most leading economies has been downgraded.

The shift of electronic production from the higher labour cost Western Europe to Central & Eastern Europe has continued and indeed accelerated over the last 2 years. As the cost of electronic assembly became probably the most important element for Original Equipment Manufacturers (OEM) so EMS companies shifted much of the production to factories in lower cost areas and even though economic conditions have since improved, that production has not returned to Western European plants. By 2015, the end of our forecast period, we expect that 'CEE & Other' will account for more than 60% of all European electronic production, up from an estimated 57% at the end of 2010.

Group 1 EMS companies, typically with global operations and sales turnovers in billions of Euro have continued to migrate the remaining production of Consumer, Computer and Mobile Communications (3C) products to lower cost countries. There has been an increase in the number of Group 2 and Group 3 EMS companies operating lower cost manufacturing plants as they seek to provide greater value to their customers. All of these three groups have retained some manufacturing and the greater part of the design, development and sales teams in Western Europe to maintain relationships with the OEM's based in that area. Group 4 Ems companies in our definition, are small and operate nationally and possibly in niche sectors.

We expect to see the low volume/high mix sectors of Automotive, Medical, Control & Instrumentation, Industrial and Telecommunications (AMCIT) grow in Western Europe by between 2.8% to 4.4%. In total we estimate that there are more than 720 companies across all groups of EMS companies and we expect to see further consolidation of this number as competition in Western Europe in the AMCIT sectors increases. Some companies are still at lower sales turnover in 2010 than for previous years and although many companies have restructured their operations to match lower sales, some are still recovering their financial position and vulnerable to further difficult economic conditions. Electronic production, specifically automated board assembly is beginning to become commoditised and all EMS companies will be looking to increase margins by the provision of additional services throughout the lifetime of the product.

The tenth edition of **The European EMS Industry report 2010-2015** highlights the issues impacting the European EMS industry. This comprehensive report provides:-

- An analysis and revenue forecasts for both West and East and Central Europe in a single report.
- The key trends impacting the major EMS companies by market group.
- Detailed profiles of the Top 20 European EMS companies, including a ranking for 2010.
- Country and regional profiles including key trends, the role of the Global "Tier 1" companies and profiles of the major EMS companies.
- A directory of over 1,000 plus manufacturing locations.

Who will benefit

The Electronics Manufacturing Services (EMS) industry report is essential research for all areas of the electronics industry including:

Distributors and manufacturers of electronic components and materials - the profiles and directory provide a detailed analysis of potential customers, highlights growth markets by sector and country/region. The understanding and interpreting of the market trends will also be important as this market further develops.

Production equipment suppliers – the profiles and directory provide a detailed analysis of potential customers, track key EMS trends and provide location information.

OEMs – A comprehensive guide to the major EMS companies in Europe in detail and further listing of EMS companies by geographic location. We analyse the structure of the industry and the emergence of the four distinct groups of EMS company.

EMS – The report provides a complete overview of the European EMS industry, including revenue forecasts by country, competitor information and the trends which will have an impact on business in the period from 2011 to 2015.

Other organizations which will benefit from the report include:

- Government, including investment organizations.
- Financial and industry analysts.
- Academic institutes & universities tracking developments in the electronics industry.

Europe will continue to provide significant opportunities for companies already involved in the European EMS industry. It will also offer opportunities for companies in Asia and the Americas who are looking to expand geographically into new markets.

The European EMS Industry report allows you to track these developments in a single cost-effective study providing both detailed market and company analysis.

For additional information contact:

Anita Caird, Sales Manager
anita.caird@rer.co.uk

Andrew Fletcher, Research Manager
andrew.fletcher@rer.co.uk

Reed Electronics Research
Harvard House
Grove Technology Park
Wantage
Oxfordshire
OX12 9FF
United Kingdom

Tel +44 (0) 1235 227310
Fax +44 (0)1235 868620
Website :- www.rer.co.uk

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1 Introduction

1.1 Scope & Methodology

This is the tenth edition of the European Electronic Manufacturing Services Industry report (previously titled the Profile of the European Contract Electronic Assembly Industry) and updates the ninth edition, which was published in August 2009. Although building on the database of information which has been gathered since the publication of the first edition in 1993 the new report has been fully revised with greater emphasis being placed on analyzing the EMS providers and the key trends which will impact the industry in the period to 2015.

As in the previous reports, EMS is defined as electronic manufacturing offered as a service to other companies. It does not include the in-house activities of companies, which also provide an EMS service. The production of the printed circuit board is to some extent included, since some EMS companies have acquired PCB production capabilities and all are often involved in the design aspects of the PCB layout when offering design services as part of the EMS activity.

The generation of the market numbers has been completed using both a 'bottom up' approach where details of EMS companies have been accumulated from all sizes of companies, and a 'top down' view of published data from a variety of sources. Statistical information which was obtained from government departments, trade associations, company annual reports and various other publications, and in particular the *Yearbook of World Electronics Data*, was combined with data obtained from individual companies, to evaluate the state of the market and future developments. The previous report along with data from RER's database were used as a base point in evaluating market developments during interviews with key personnel of a cross-section of EMS companies. Further information was obtained by Questionnaires in personal and telephone interviews.

Forward looking forecasts are constructed from the last full reported year (2010) and include known information to date on EMS company activities such as collaborations, mergers, acquisitions and closures. These forecasts also include information from EMS and other companies on their expectations for growth in the coming years.

For sales to individual sectors such as computer, communications, mobile etc, we have used information from the companies themselves either in the main from published accounts or from known information about plant specialization, number of employees etc.

Annual reports, company brochures and corporate literature were collected from over 200+ EMS companies. Where information of a confidential nature was obtained, this was used solely to evaluate market trends in product and end-user sectors. In addition a further 500 plus companies, primarily the smaller national EMS providers, were checked for the directory.

The consultants also visited relevant trade shows including Productronica 2009 and Electronica 2010 in Munich; the UK-based NEW Electronics exhibition in 2010 and 2011 and SMT & Hybrid 2010 and 2011 in Nürnberg, Germany.

Where applicable local currencies have been converted to Euro values. The forecasts assume constant Euro values. The Euro values used in the report are given in the Appendix.

Original Design Manufacturers (ODM) and Electronic Manufacturing Services (EMS)

The key differentiator between the two types of organisations is that ODM's own intellectual property as well as providing electronic manufacturing services. The EMS is considered to only provide the manufacturing services. In Asia, there are large manufacturing services who also own intellectual property in the products that are sold as branded products by the OEM. Whilst there are companies in Europe that do offer the ODM service and state that ODM sales have been made, it is frequently not separated from the overall sales in Europe in its published form.

Given the difficulty in separating out specific ODM sales data, we have incorporated this within the total EMS sales. From the research we would estimate that the total ODM element is approximately 5-10% of the total EMS values and mainly within the top 20 companies.

1.2 Report Structure

Following the Executive Summary, Section 3 provides a detailed analysis of the trends impacting the European EMS industry in the period to 2015. EMS revenues are provided for individual countries and split by region. A figure for the European EMS market by segment is also provided. Again for this edition, the report has also analyzed the trends impacting the four principal groups of EMS company:

- Global.
- Multinational European
- Sub-regional.
- National.

Section 4 provides profiles of the top twenty EMS providers in Europe with an estimate of their sales for 2010. The structure of the industry and a summary of the latest industry developments are also provided.

Section 5 provides a breakdown by country and region. For each section an overview of the electronics industry is provided along with a summary of the key factors impacting the EMS industry. For each country or region we have outlined the role the global "Tier 1" companies are playing along with profiles of the leading EMS companies.

Section 6 is a directory of over 1000 manufacturing locations from over 700 separate companies. The directory is split by country. Companies who are focused solely on cable and wire harnesses are not covered within the directory.

For the this edition we have again provided a ranking of the Top 50 European EMS providers for 2010, the table in Section 7 of the report.

Sample Pages

Table 3.5 EMS Revenues for CEE and Other

Euro Millions	2010	2011	2012	2013	2014	2015
Czech Republic						
Hungary						
Estonia						
Poland						
Slovakia						
Romania						
Other						

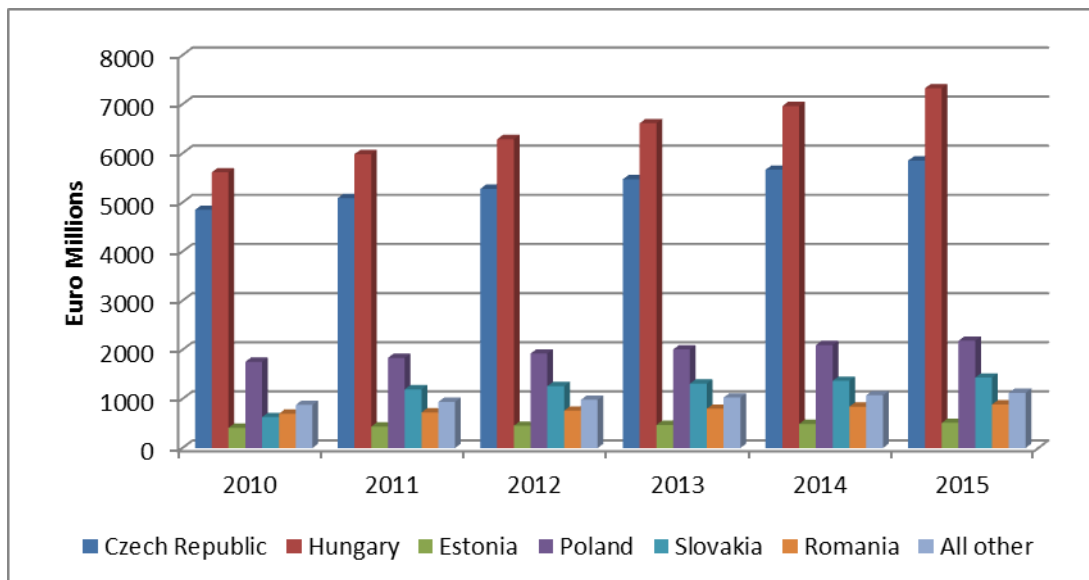


Figure 3.5 EMS Revenues in the CEE and Other

3.2.2.3 Europe EMS Revenues by Country

Table 3.6 lists all the principal countries with their associated forecast EMS revenues for the period 2010-2015 and the compound average annual growth rates (CAAGR). Overall we forecast that the EMS revenues will grow at a faster rate in CEE, North Africa, Russia etc., due to the attractiveness of the lower labour rates in those countries which will continue to drive migration of production from the West. The possible concern for restrictions of skilled labour in the principal countries in CEE and North Africa has not materialised thus far although this may arise if the migration to these low labour cost areas accelerates.

Key Characteristics:-

- All have attributable European sales in excess of Euro 450 billion and some with European sales of several billion.
- All offer ODM services to different extents, although this appears to be reducing in significance.
- Elcoteq is the only European headquartered company amongst the list, the others have their HQ in either the USA or in Asia.
- Their ability to leverage vertical integration for cost savings and response times is very high.
- They have numerous manufacturing and repair facilities around the world, frequently with other suppliers supporting worldwide OEM customers, and often in low labour cost countries.

Strategic Space Analysis – By Sector and Geographical

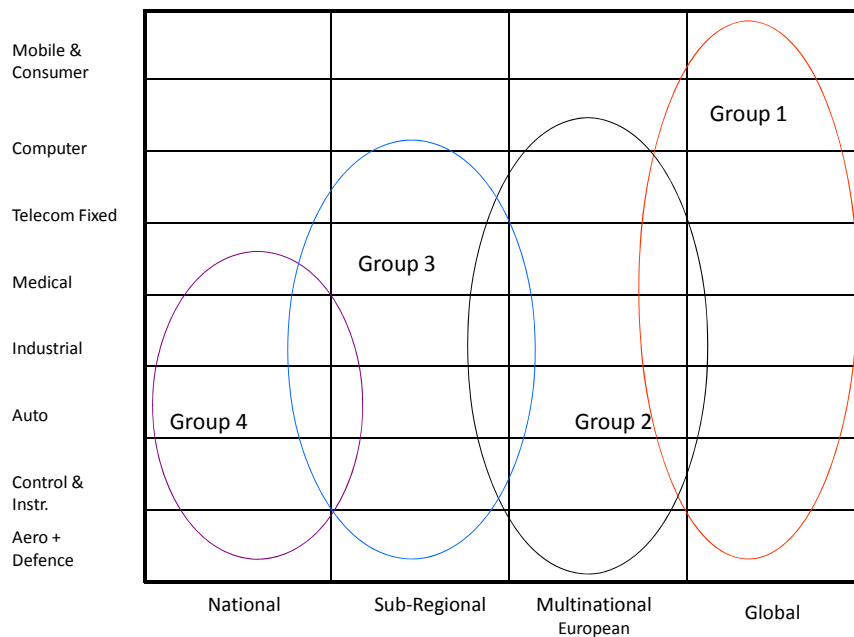


Figure 3.12 Strategic Space Analysis for the 4 EMS Groups

Group 2 -- Multinational European

- Typically larger European EMS with lower cost manufacturing in either CEE, North Africa and often with offices and plants in Asia, mostly China and India.
- They concentrate most of their activities in the AMCIT sectors (Automotive, Medical, Control & Instrumentation and Telecoms).
- They typically have annual sales in the region of €550 million to €100 million, although a few are slightly below the lower end.
- They may have manufacturing, purchasing or sales operations in China and India but their customers are predominantly in the European theatre.

Group 3 -- Sub-Regional

- Typical annual sales of €25-100 million.
- Almost all have manufacturing in Western European countries but many have plants in low cost countries in Eastern Europe or North Africa.
- The companies in this group tend to operate on a national or sub-regional level such as Nordic, Benelux etc.
- Most of their customers are within the AMCIT sectors.

4.3.14 Kitron

Kitron is the leading Norwegian EMS provider and one of the largest in Scandinavia, the company focusing on four key segments data/telecom, defence/offshore, medical and industry. At the end of 2010, Kitron employed 1,112 people (Norway 531, Sweden 193, Lithuania 339 and other 49) and reported sales of NOK1,643.9 million. Kitron is a medium-sized high mix-low volume company offering a full range of manufacturing services including development and design through industrialisation, sourcing and logistics to manufacture, redesign and upgrading of products to extend their life.

In June 2009, Kitron ASA signed an agreement to sell its Microelectronics business at Røros to some of the local employees and Norbit AS. Kitron Microelectronics AS, which is not seen as a core business, has about 50 employees and had an annual turnover of NOK 128 million in 2008. The transaction closed in the summer of 2009.

In May 2010, Kitron AS signed an agreement to sell its Development Department located in Oslo to some of the local employees and Simpro AS. Kitron Development has about 25 employees and had an annual turnover of NOK 22 million and an operating loss NOK 11 million in 2009. At the same time Kitron has entered into a cooperation agreement with the new company, Creo Development AS, for the provision of development services. The sale is a part of the company's strategy to increase its focus on industrialisation, test and new product introduction while cooperating with third party development houses. The objective is to improve the complete offering to the customers by combining the strengths of Kitron with dedicated development environments.

In September 2010, Finnish investment company Scanfil plc (now Seivi Capital) announced it had undertaken a strategic investment and acquired a 32.96% stake in Norwegian EMS provider Kitron from Hermis Capital in a transaction valued at NOK 143.9 million (around Euro 18.0 million). Seivi Capital's principal investment is the 100% ownership of the Finnish company Scanfil EMS Group (see Section 5.4.4.15). The investment in Kitron ASA is part of a move by Scanfil to strengthen its position and commitment to the international EMS market. Kitron's European manufacturing activities are split across four companies Kitron AB in Norway, Kitron AS in Sweden, UAB Kitron in Lithuania and Kitron GmbH in Germany. In addition a subsidiary Kitron Sourcing AS is responsible for sourcing activities for the whole group. In Norway, Kitron AS has a manufacturing facility in Arendal. The manufacturing facility in Oslo was closed in 2006 and the plant in Horten in March 2009. In Sweden, Kitron AB has facilities in Karlskoga and Jönköping. The manufacturing activity in Flen was discontinued in the second half of 2007.

In November 2010, Kitron announced plans to reorganise its Swedish operations to increase its competitiveness and improve profitability. This plan involves the transfer of production to lower cost countries and to optimise the production between the operating units in Sweden. The reorganisation will primarily affect the operation in Karlskoga. The Karlskoga site will be downsized to a manufacturing site for defence customers and a customer interface for Kitron's entities in Lithuania and China within the medical segment. The Karlskoga operation will continue to provide technical services to its customers. As part of the reorganization Kitron is also planning to centralise all the administration functions to Jönköping in order to reduce indirect costs. An estimated 55 jobs were cut through the restructuring.

In April 2010, Kitron UAB successfully completed the Railway Industry Standard (IRIS) certification audit. The move is in response to new safety regulations in the railway industry, and to maintain strategically important customers.

Kitron expanded into Germany in December 2009 through the acquisition of VERU Electronic GmbH in a deal valued at Euro 700,000, on a debt free basis. The final deal was closed in early 2010 with VERU becoming a wholly owned subsidiary. The new German unit will market Kitron's complete range of manufacturing services and act as a local centre for NPI (New Products Introduction) and small series manufacturing in Germany. For larger series manufacturing Kitron will offer its facilities in Lithuania and later on in China as low cost alternatives, while the facilities in Scandinavia will be offered for high complexity products.

In response to the requirements of its customers for manufacturing in Asia and North America Kitron have established manufacturing facilities in China and the USA. In China, Kitron has entered into a lease agreement with Nordic Industrial Park Co Ltd for a factory in Ningbo, China. The plant covers more than 4,000 sq m with the production of low complex products beginning in the second half of 2010.

In June 2010, Kitron announced it would establish a fully owned subsidiary in Johnstown, Pennsylvania, USA. The 20,000 sq ft plant started operations at the beginning of 2011 and will predominantly be concentrated towards the defence industry.

At the beginning of 2010 Kitron's subsidiary Kitron AB in Karlskoga received new orders from Maquet Critical Care, a strategic customer within the Medical equipment segment. Kitron AB manufactures part of Maquet's ventilator platform for use in hospitals worldwide. Over a 6-month period new orders, in addition to normal volumes, has been received for a total value of more than NOK 40 million.

In January 2010, Kitron ASA announced it had received new orders from Kongsberg Defence and Aerospace totalling about NOK 28 million. The orders concern complex communication equipment and are for delivery during 2010 and first half of 2011.

In February 2010, Kitron AS announced it had been awarded a new industrial project as part of a long term relationship with Danaher Motion Stockholm AB. The agreement covers development, industrialisation and manufacturing services, and represents a strengthening of the existing co-operation between the two companies. The scope of the project represents a total value of more than NOK 100 million over five years. Kitron's expansion into China played an important role in the extension of the

In May 2010, Kitron Microelectronics AB in Jönköping, Sweden signed a strategic cooperation agreement with Atlas Copco Tools AB. The agreement will be worth about NOK 45 million annually in the long run, and includes electronics manufacturing and assembly of industrial tools. Planned manufacturing start is from the third quarter of 2010.

In a separate announcement Kitron subsidiaries Kitron AB, Sweden and Kitron UAB, Lithuania have recently acquired four new customers with a volume of NOK 180 million over three years. The first deliveries will start in Q4 2010. The products are within the Industrial and Energy segments.

In September 2010, Kitron ASA's subsidiary Kitron AB in Karlskoga, Sweden, has received new orders from BAE Systems AB of about NOK 26 million. The orders concerns manufacturing and technical service of complex control systems for the Archer project. Deliveries will take place in 2011 and 2012.

In April 2011 Kitron announced two major orders. Kitron AS signed a contract with a leading supplier of medical equipment. The agreement implies that Kitron AS for some specific products will be the sole supplier in 2011 and 2012. In this period the expected turnover linked to the contract is between NOK 350 million and NOK 400 million. Kitron already has received orders under the contract totalling to NOK 75 million. The company also announced that there are possibilities for extension of the agreement after the current two year period.

Kitron subsidiary Kitron Microelectronics AB in Jönköping, Sweden, has entered into a Letter of Intent (LOI) with a leading supplier of optical networking solutions. The LOI express the intention of the parties to continue its co-operation until the end of 2014 and to strive for competitive pricing of the products. Kitron estimates the potential sales value to more than NOK 400 million up to the end of 2014.

Kitron in May 2011 announced it had received a US\$3.9 million (NOK 22.5 million) contract from Lockheed Martin to produce the Integrated Backplane Assembly (IBA), for deliveries to the F-35 Low Rate Initial Production program, called LRIP 5. The delivery starts second half of 2011 and ends first half of 2013. Norway is one of the international partner countries participating in the F-35 program. Under the manufacturing license agreement between Kitron ASA and Lockheed Martin Mission Systems and Sensors, Kitron will manufacture, test, maintain and repair the IBA in the F-35 Joint Strike Fighter.

In June 2011, Kitron received a US\$3.2 million (about NOK 17 million) contract from Kongsberg Defense Corporation to deliver electronics. Kitron will manufacture components for the Common Remotely Operated Weapon Station (CROWS II) contract that Kongsberg Defence Corporation has with the US Army. Kongsberg Defense Corporation is a wholly owned subsidiary of the Kongsberg Group. The work will be performed at Kitron's new manufacturing facility, located in Johnstown, Pennsylvania.

Kongsberg is a long standing customer. In April 2011, Kitron signed a five year manufacturing agreement with Kongsberg related to deliveries of electronics to the NSM (Naval Strike Missile). The parties have also agreed on a letter of intent to co-operate in the first phase of the manufacturing of electronics for the JSM (Joint Strike Missile). In connection with the signing of the agreement Kitron has received the first order for the NSM, which amount to NOK 15 million, and is for delivery in the first half of 2012.

In July 2011, Kitron and Prevas AB, the Nordic leader for embedded systems and industrial IT, announced a strategic co-operation to jointly work together to provide customers support throughout their value chain including product & test development, industrialization, sourcing, manufacturing, logistics, redesign and other after sales services. In co-operation Prevas and Kitron will assist the customer to think product life cycle from the beginning and by using a joint Component Information System (CIS) help standardizing and optimizing the products and cost structures. This cooperation strengthens further the already market leading positions of both Prevas and Kitron within embedded systems, product development and Electronic Manufacturing Services in the Nordics as well as giving a good platform for further developments outside the Nordics.

Kitron Group Financial Highlights – Year end December

In 2010, revenue in the Data/Telecoms segment declined by 9.4% to NOK 396.2 million. This represented 24.1% of the group's revenue (2009: 25.3). The reported loss of a major Data/Telecoms client is having a negative effect on the development for the segment. The client will be phased out from end of Q1 2011 and the annual impact is estimated to NOK 100 million although this is expected to be offset by new business from existing and new customers. The Defence segment decreased by 4.3% in terms of revenue from NOK 369.4 million in 2009 to NOK 353.4 million in 2010. The segment accounted for 21.5% (2009: 21.3%) of the group's total revenues. Kitron is currently involved in defence programs with among others the Kongsberg Group and Lockheed Martin that could yield more than NOK 1 billion in revenue in the years to come. The Industry segment increased revenue by 20.1% to NOK 302.9 million (2009: NOK 250.4 million), accounting for 18.4% of the group's total revenue (2009: 14.5%). Revenue in the Medical equipment segment increased by 21.1% to NOK 504.1 million in 2010 (2009: NOK 416.2 million), corresponding to 30.7% of the group's revenue (2009: 24.0%). The Medical equipment segment is less cyclical than other market segments. Kitron focuses on additional growth in this segment and expects a long-term positive development. The Offshore/Marine segment decreased by 66.1% in terms of revenue from NOK 257.3 million in 2009 to NOK 87.3 million in 2010. The segment accounted for 5.3% (2009: 14.9%) of the group's total revenues. In the last year there has been a sharp drop in demand from the offshore segment but has since stabilised and the company expects the segment to start to recover in 2011.

Sales by Market

NOK millions	2010	2009	2008
Defence	353.4	369.4)	698.7
Offshore/Marine	87.3	257.3)	
Data/Telecom	396.2	437.4	541.3
Medical	504.1	416.2	431.9
Industrial	302.9	250.4	440.6
Total	1643.9	1730.7	2112.5

Sales by Geographical Area

NOK millions	2010	2009	2008
Norway	893.2	1038.3	981.0
Sweden	646.8	595.3	963.0
Rest of Europe	35.5	48.2	76.7
USA	68.4	47.0	60.6
Other	-	1.9	31.2
Total	1643.9	1730.7	2112.5

Sales by Business Area

NOK Million	2010	2009	2008
Kitron AS (Norway)	1088.8	1143.9	1322.4
Kitron AB (Sweden)	389.7	362.4	498.8
UAB Kitron (Lithuania)	282.0	336.1	421.7
Other & Eliminations	(116.6)	(111.7)	(130.4)
Total	1643.9	1730.7	2112.5

Operating Profit/(Loss) by Business Area

NOK Million	2010	2009	2008
Kitron AS (Norway)	41.8	48.3	106.3
Kitron AB (Sweden)	(42.3)	(0.5)	27.5
UAB Kitron (Lithuania)	21.1	21.0	33.6
Other & Eliminations	(12.7)	(4.8)	(6.6)
Total	7.9	64.0	160.8

Leading Financial Indicators

NOK millions	2010	2009	2008
Net Sales	1643.9	1730.7	2112.5
Operating Profit/(Loss)	7.9	64.0	160.8
Net Profit/(loss)	(25.4)	8.2	214.3
Capital Expenditure	47.1	27.6	76.3
Total assets	1015.5	982.2	1250.2

Revenue amounted to NOK 860.5 million in the first six months of 2011, which represents a 2.8% increase compared with the same period in 2010. The order intake was NOK 805.2 million and the order backlog was NOK 781.4 million, a decrease of 12.0% and 10.0% respectively. The general trend within Kitron's market segments is positive although concerns remain about the global economic recovery and outlook. The reduction in order intake and backlog compared to the first half last year is mainly due to the fact that customers are reducing the order lead time as the component market is normalising and as such not having any major impact on revenue. Kitron group's revenue in the second quarter was 1.2% higher than in the same period in 2010, and amounted to NOK 430.7 million (Q2 2010: NOK 425.7 million). Revenue in the market segment Energy/Telecoms was down 44.1%, Defence/Aerospace was down 5.0%, Industry increased by 39.3%, Medical equipment was down by 2.9% and Offshore/Marine was up 165.5% compared to the second quarter of 2010. Revenue in the Norwegian operation represented 57.3 % of Kitron's gross revenue during the second quarter (Q2 2010: 62.2%). The Swedish operation represented 22.3% of the group (Q2 2010: 23.1%) and Kitron's operation in Lithuania provided for 20.3% (Q2 2010: 14.7%). Kitron's revenue in the second quarter of 2011 was distributed as follows: Energy/Telecoms 13% (Q2 2010: 23%); Defence/Aerospace 23% (Q2 2010: 25%); Industry 24% (Q2 2010: 17%); Medical equipment 29% (Q2 2010: 31%); and Offshore/Marine 11% (Q2 2010: 4%).

5.2 Germany

5.2.1 Electronics Industry Overview

Germany is Europe's largest electronics producing nation and is generally diversified in the range of products it has to offer. Most sectors contribute extensively to the domestic market, as well as individual segments claiming sizeable shares of the world market.

Control and instrumentation is the largest sector, accounting for around 30% of German production in 2009 with computer equipment accounting for 12%, radio communications equipment 5.8%, telecommunications 4.9% and medical 7.6%. Components accounted for 33.5% of the total.

In 2009, electronics production declined by a more than anticipated 19.5%, in part due to the impact of the global recession but also due to the closure or scaling back of production in the computing, communications and consumer audio segments.

Table 5.2 Summary of German Electronics Production

Euro Millions	2006	2007	2008	2009	2010	2011	2012	2013	2014
Computing	9721	9513	8347	5477	5618	5708	5685	5391	5111
Industrial	18935	19925	20599	17832	20322	21091	22146	23088	24047
Communications	12730	9673	6124	4604	4930	5029	4993	4948	4907
Consumer	1736	1862	1542	765	702	671	629	591	557
Components	15370	16560	16944	14422	16594	17119	17655	18120	18549
TOTAL	58492	57533	53556	43100	48167	49619	51108	52138	53171

Notes: Computing includes office equipment; Industrial combines control and instrumentation and medical and industrial; and communications combines fixed and wireless communications (inc defence). Due to computer rounding the summary figures above may differ slightly from the figures presented in the main tables.

Production in 2010 rebounded on the back of strong growth in exports and a better than expected domestic economy. The electronics industry was also boosted by the return to growth in automobile production and increased demand for electronic components.

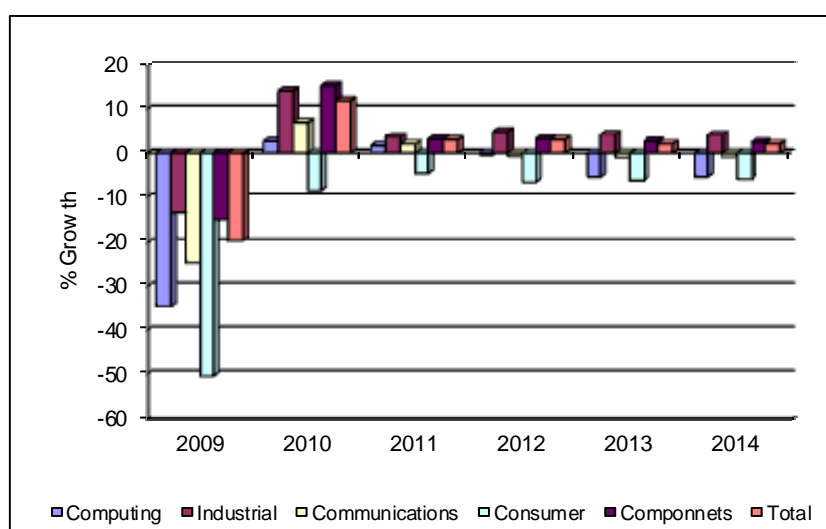


Figure 5.3 German Electronics Production - % Growth by Sector 2009-2014

Germany's electronics industry is dominated by industrial electronics and in particular control and instrumentation, medical and automotive. After declining in 2009, control and instrumentation increased by 18% in 2010, led by a surge in exports and solid growth in the domestic economy. Medical and industrial also showed growth in 2010 although the increase was in the single-digits.

5.4.3 Global “Group 1” Companies

The Global “Tier 1” companies gained a strong position in the Nordic market through a series of acquisitions but have more recently closed, sold or scaled back operations.

Flextronics: Flextronics through its Special Business Solution unit has manufacturing operations in Skive, Denmark, which was acquired from Bang & Olufsen, and Karlskrona, Sweden. The company reportedly is closing its plant in Billingstad, Norway following the cancellation of a major contract and in August 2011 it was also reported that the company planned to close the plant in Skive by the end of the year.

Elcoteq: Elcoteq has a limited presence in the Nordic countries with only product development and technical support offices in Finland and Sweden. In August 2011, the three subsidiaries in Finland filed for bankruptcy as a result of the company’s severe financial difficulties.

Sanmina-SCI: Sanmina-SCI has now only one enclosure facility in the region in Salo, Finland following the closures of two plants in Sweden (Kista and Forserum). EMS operations are located in Haukipudas, Finland and Örnsköldsvik, Sweden, the site in Haukipudas also acts as a NPI manufacturing operation. A second NPI facility is located in Salo, Facility.

5.4.4 Other Leading EMS Companies to the Nordic Countries

Outside of “Group 1”, the Nordic region has a well established EMS industry although in recent years, and mirroring developments in the rest of Western Europe, a number of facilities have been scaled back or closed. In addition to transferring production to the Far East, Nordic EMS providers have established a strong presence in the Baltic States and Poland.

5.4.4.1 BB Electronics

BB Electronics, with headquarters in Horsens, was initially established in 1975 as a manufacturer of PCBs and provider of assembly services to the Danish electronics market. In 2010, the company reported sales of DKK 703 million (2009: DKK 553 million) and a net profit of DKK 5.0 million. Axcel, one of the leading industrial investment companies in Denmark is the major shareholder in the company with a 62.5% stake. At the end of 2010 the company employed 706 people down from 673 a year earlier of which 272 were in Denmark (2009: 320) and 434 in China (2009: 353).

BB Electronics offers a range of services from new product introduction, global sourcing, manufacturing, integrated logistics and after sales for principally the industrial, medical and telecom markets.

The company has two production plants, one in Denmark and one in China:

- BB Horsens - 13,500 sq m. The plant focuses on high quality, high flexibility products which have a high mix of components and short delivery time. The facility is approved to ISO 9000, ISO 14001, OHSAS 18000 and ISO 13485. The plant has three Siemens SMT lines and three Fuji SMT lines.
- BB Suzhou, China – 6,000 sq m. The plant offers high volume production of low to medium complexity electronics. The facility is approved to ISO 9001, ISO 14001 and ISO 13485. The plant has two Fuji SMT lines.

In November 2007, BB Electronics opened a new technology facility close to the company’s Horsens headquarters. The 1,600 sq m building and will become the centre for the company’s activities within development of electronics and mechanics. Besides manufacturing of prototypes the facility also included a production environment with advanced production and test technologies such as 3-D x-ray. The centre has

6 DIRECTORY

6.1 Austria

Company: **AB Mikroelektronik GmbH**

Address: Josef.-Brandstätter Straße 2, 5020 Salzburg, Austria

Tel: +43 662 44991-0

Fax: +43 662 420489 10

Website: www.ab-mikro.at

Parent Company: TT electronics, UK

Note: The company is focused on hybrid technology and mechatronics

Company: **AlliedPanels**

Address: AlliedPanels Park 1, 4873 Frankenburg, Austria

Tel: +43 7683 20111

Fax: +43 7683 20031

Website: www.celestica.com

Parent Company: Celestica, Canada

Company: **Becom Electronics GmbH**

Address: Technikerstr. 1, 7442 Lokenhaus, Austria

Tel: +43 2616 2930 0

Fax: +43 2616 2930 112

Website: www.becom.at

Sales: Euro 41 million (2010)

Parent Company Bewag

Company: **CMS Electronics GmbH**

Address: Ebentaler Str. 140, 9020 Klagenfurt, Austria

Tel: +43 463 3834 0

Fax: +43 463 3834 417

Sales: Euro 41 million (2010)

Website: www.cms-electronics.at

Company: **Flextronics International**

Address: Friesacher Strasse 3, 9330 Althofen, Austria

Tel: +43 426226441100

Fax: +43 4262 2645

Website: www.flextronics.com

Parent Company: Flextronics, Singapore

Company: **Graf Elektronik GmbH**

Address: In Steinen 5, 6850 Dornbirn, Austria

Tel: +43 5572 9020 0

Fax: +43 5572 9020 255

Website: www.grafgroup.com

Company: **Jabil Circuit Austria GmbH**

Address: Gutheil Schoder Gasse 17, 1232 Vienna, Austria

Tel: +43 1 66105 3423

Fax: +43 1 66105 3077

Website: www.jabil.com

Parent Company: Jabil Circuit, USA

Company: **United EMS Ltd**

Address: 28 Melford Court, Hardwick Grange, Warrington WA1 4R2, United Kingdom

Tel: +441925 838300

Fax: +44 1925 837259

Website: www.unitedems.co.uk

Company: **VC Electronics**

Address: Unit 14, Commercial Road, Goldthorpe Industrial Estate, Rotherham S63 9BL, United Kingdom

Tel: +44 1709 880002

Fax: +44 1709 881112

Website: www.vcelectronics.com

Company: **Walkbury Electronics Ltd**

Address: 30 Metro Centre, Welbeck Way, Peterborough, Cambridgeshire PE2 7UH, United Kingdom

Tel: +44 1733 404830

Fax: +44 1733 404839

Website: www.walkbury.co.uk

Company: **Walters Group**

Address: 12 Merlin Centre, Lancaster Road, Cressex Industrial Estate, High Wycombe HP12 3TB, United Kingdom

Tel: +44 1494 795100

Fax: +44 1494 461107

Website: www.waltersgroup.co.uk

Company: **Weeden Electronics Ltd**

Address: Unit 66, Wilburn Way, Hitchin, Herts SG4 0TP, United Kingdom

Tel: +44 845 658 2400

Fax: +44 845 658 2478

Website: www.weedone-elctronics.com

Company: **Wilson Process Systems**

Address: Waterworks Road, Hastings, East Sussex TN34 1RT, United Kingdom

Tel: +44 1424 722222

Fax: +44 1424 720730

Website: www.wps.co.uk

Company: **Xitek Ltd**

Address: Unit B2, Haysfield Business Centre, Spring Lane North, MalvernWorcs WR14 1GF, United Kingdom

Tel: +44 1684 899125

Fax: +44 1684 899178

Website: www.xitek.co.uk

Company: **Zeal Electronics Ltd**

Address: Church View Business Park, Coney Green, Clay Cross, Chesterfield, Derbyshire S45 9HA, United Kingdom

Tel: +44 1246 252430

Website: www.zeal-electronics.co.uk

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