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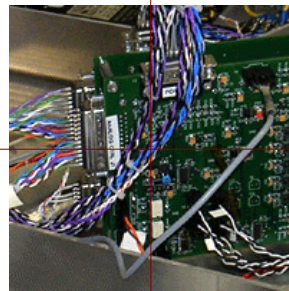
E- MARKETPLACES IN THE ELECTRONICS INDUSTRY

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December 2005

Report



Abstract

The electronics industry is of high importance and well suited for e-business due to its manufacturing process and high degree of globalisation. The sector is among the leading users of e-business and electronic marketplaces.

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1. Industry definitions and characteristics

1.1 Definition of the Electronics industry

“Electronics” is a wide term that covers an extensive range from manufacturers of office machinery and computers (NACE 30), manufacturers of machinery and apparatus (NACE 31) to manufacturers of television and communication equipment and apparatus (NACE 32).

1.2 Sector structure and economic profile

Within the EU, the small companies with less than 10 employees represent 76% of the companies. However, the larger companies, with more than 250 employees employ more than 66% of the sector's employment.

Structure of the electrical machinery and electronics industries in the EU

	Total (EU-15)	Enterprises with ... people employed			
		1-9	10-49	50-249	250+
NACE	Number of enterprises	Structure in % of total			
30	6,467	80.0	13.2	4.7	2.1
31	45,981	70.9	21.3	5.9	1.9
32	21,301	77.9	14.7	5.2	2.2
	Number of people employed	Structure in % of total			
30	2,060	6.1	9.1	16.0	68.8
31	13,941	7.1	14.6	21.0	57.3
32	8,346	4.6	8.1	14.6	72.7

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

For the sub-section electronic machinery and apparatus (NACE 31), the European companies like Siemens and ABB are worldwide leaders and compete with the American leader General Electric.

American companies like IBM, HP-Compaq and Dell dominate the Office machinery (NACE 30), whereas the rest of the market (NACE 32) is very competitive with major companies both in the US (Intel, Texas Instruments), Europe (Nokia, Alcatel) and Japanese (Sony, Panasonic).

1.3 Economic relevance

The Electronics industry is of high importance, and employs about 2.4 million people in EU-15. The sector with the highest absolute employment figure is the traditional electronic machinery industry with about 1.4 million employees. Within the NACE 31 (manufacturers of machinery and apparatus), Germany has the highest concentration of jobs, and accounts for 33% of the European jobs in this industry.

1.4 Trends

Electrical Engineering (NACE 31) is a relatively traditional sector that is dominated by companies that have been in the market for a long time.

The electronic industry (NACE 30 and 32) in contrast is a very dynamic and volatile high-tech market. The electronics sector has been the fastest growing business sector in many European countries during the 1990s, and has contributed considerably to productivity and economic growth.

The electrical machinery and the electronics industry exhibit significant differences in the production schemes and their degree of vertical integration. In electrical engineering, Original Equipment Manufacturers (OEM) are often highly vertically integrated, keeping large parts of the entire production and value-creation process in-house. In contrast, the electronics industry is characterised by high specialisation of firms along the value chain. The highly modular set-up of electronic products allows OEMs to outsource production steps and to purchase parts and modules from specialised manufacturers. As a consequence, the value chain in the electronics industry is more complex, involving more players and stages and the industry structure has changed over the last decades.

Most companies in these supply chains now concentrate on their core competences, typically no more than one or two processes. Non-core processes are outsourced to

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(specialized) partners, and increasingly to the EMS (Electronics Manufacturing Services) industry, to achieve cost reductions, increased asset management efficiency, shorter time to market, to share business risks and to focus on core competences. The production of electronics has become an entirely global business with all its concomitants: international mergers and acquisitions, global price competition, and the formation of regional production clusters that specialise in one particular production activity (for instance, hard-disks in Singapore or LCD screens in Taiwan).

Intense competition, rapidly declining prices, unpredictable customer demand, and constrained material supplies are facts of life in the global electronics supply chain. The pursuit of higher prices and margins leads to a continuous stream of new products, each able to command a premium price for a short period of time before becoming commodities. This challenging cycle is faced every day by most of the companies operating in virtually every segment of the electronics industry. Time to market is extremely important to electronics manufacturers. Better management of the engineering and supply chains assure less time for product development and reduced costs.

Issues such as globalisation, low margins, short product lifecycles, short time-to-market, the need for customer-specific products, and last but not least the continuously decreasing prices (of parts, and end products), have been around for decades, but these issues have become more stringent in recent years.

According to Electronic Business¹ globalisation started with sending manufacturing offshore, to less technologically advanced areas to take advantage of the lower labour costs. As the local economy grew, the demand for increasingly advanced products also grows. With the growth of the local economy and higher pay, the workforce takes on more complex tasks, such as management and production design. The American Electronics Association states that 60% of the U.S. high-tech companies received more than half their revenue from non-U.S. markets in 2003.

2. Electronics sector e-business

At a strategic level, the electronics industry has evolved dramatically during the last years. Vertically integrated companies have restructured themselves, focusing on core competencies, slashing costs and building networks of suppliers and partners that are also specialized and cost competitive. Cutting-edge products now come together not solely from individual companies but from networks of companies, each contributing a specialized, high-value aspect of the total solution.

In this complex manufacturing environment, with the challenging product introduction cycles of the industry, information and communication technologies (ICT) are an instrumental part of the companies' strategy, and collaboration across the supply chain has become a crucial element in the creation of business value. Moreover, easy access to information on customers, products and trends can be a competitive advantage by offering better customer service, accurate product data and up to date forecasts.

¹ Cameron Crotty -- *Electronic Business*, 11/1/2005
<http://www.reed-electronics.com/eb-mag/article/CA6279561?pubdate=11%2F1%2F2005>

At the structural level, several features of the electronics industry make the sector particularly suitable for e-business:

- Electronics is a truly global business. Product design, production and related marketing activities are frequently carried out in different parts of the world, exploiting comparative advantages of regions.
- Components and products are highly standardised, easy to describe and traded in considerable quantities.
- Value chains are complex and deep. Outsourcing is very common and requires intense cooperation between enterprises, often across cultural and geographical borders.
- Product life cycles are short. Time to market is one of the most important strategic variables in the industry. In addition, technological progress means rapid depreciation of products and components.
- Manufacturers of electronics equipment are naturally IT-savvy and open to experiment with IT driven management solutions.

Varieties of Internet-based tools help the sector communicate efficiently and automate processes, thus saving time and reducing costs. These e-business potentials also exist for the electrical machinery industry, but not to such a large extent. The sector is clearly among the early adopters of e-business, with the electronics industry being even more advanced than the electrical machinery sector. Basic Internet infrastructures are widely implemented and no longer constitute a major barrier to e-business.

Furthermore, the character of its production and distribution processes largely shapes the e-business sector's activities.

2. 1 Online purchases

Whereas EDI is not widely used by companies from the electrical machinery and electronics industries, Extranet, and in particular B2B marketplaces and suppliers' websites, are the preferred distribution platforms for online purchases. There are no clear differences in terms of usage in the size of companies, except for B2B marketplaces, which are more used by large companies (57%) than by smaller firms.

The electronics industry is – in the aggregate, and compared to the all sectors average – leading in the use of e-marketplaces. This can be partly explained by the high level of standardisation of a large part of electronic components used as inputs in the production of electronic systems. The very short time to market and the short lifecycle of electronic components also enhance the industrialisation and automation of purchasing process throughout e-procurement systems between component suppliers and system manufacturers (component buyers).

A good example of this automation is the world market for semiconductors, especially for memories (RAM, random access memories or DRAM, Dynamic RAM). The marketplace for these components operates with spot prices and thus requires real time purchase systems. DRAM is a key component of computer systems. As a consequence, the price of DRAM is very sensitive (high price volatility) to any DRAM supply shortage in the computer production.

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Online purchases in the electrical machinery and electronics industries

	Website of suppliers	B2B Marketplaces	Extranet	EDI
Sector total (EU-5)				
% of employment	78	48	31	5
% of enterprises	84	30	36	1
0-9 employees	83	28	38	0
10-49 employees	88	36	31	4
50-249 employees	84	24	27	2
250+ employees	77	57	33	8
All (9) Sectors (EU-5)				
% of employment	88	24	28	6
% of enterprises	85	21	22	3

Base: enterprises making online purchases. EU-5 = DE, ES, FR, IT, UK. N=295 for EU-5 sector total. Weighting: Figures for size-bands in % of enterprises. Reporting period: March/November 2003.

Source: e-Business W@tch (2003/04)

3. Electronics industry e-marketplace

3.1 List of e-marketplaces from the eMarket Services' directory

E-marketplace	Products & Services Traded	Geographic Focus
ACE Suppliers	IT, communication, electronics/electrical, security and safety products as well as electronic components and productive equipments	Asian manufacturers looking for International buyers
Adibank-Ptl.com	Electrical and electronic components and items such as electronic voltage controllers, isolation transformers, insulators and metal conduits.	Spain
BidVantage	Computers and electronics components	Global with focus on the USA
Bizipoint	Power Transformer, integrated circuits, mobile phones, LCD panels, electronic switches	Global with focus on China
Click2procure	Procurement of strategic material and equipment	Global
Converge	Semiconductors, logic chips, memory devices, microprocessors, computer peripherals, software, finished goods, electronic components, other computer products and networking equipment.	Global
cxSurbana	Material, equipment and tenders related to the building and construction industry. Tenders include building, electrical and engineering works for government agencies and the private sector.	Global, main focus on Singapore
Data Collection Online	Equipment, technology and tools used for data collection, e.g. hand-held computers, line printers, Radio Frequency Identification (RFID) North America printers.	

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E-marketplace	Products & Services Traded	Geographic Focus
DCI WebTradeCenter	IT and telecommunications products, digital cameras, MP3 players	Europe with a focus on Germany
DRAMeXchange	DRAM (Dynamic Random Access Memory), random access memory (RAM) for personal computers and workstations	Global
EEchain	Computers, OEM stock, related equipment and other IT products and services	Asia
eeParts.com	Electronic components and semiconductors	Global
ElectrExnet	Several products as far as Barcoding, HVAC, Electronic Appliances, Lighting, Security, Printed Circuits and Photography are concerned	Global
ElectricNet	Switchgear, substations, circuit breakers, transformers, utility automation, transmission & distribution, etc.	Global, focusing on North America
ElectronicsWeb	Electronics and electrical products including: computers, memory, embedded systems, integrated circuits, microprocessors, modems, multiplex systems and others.	Global, main focus on North America
ElectroSupport Online	Electronic parts including include i.c.s, semi conductors, diodes, relays, capacitors, connectors, transistors, resistors, passives, actives.	Canada and USA
eXcessportal.com	Electronic components, including chips, smartcards etc.	Global
eXcesstrade.com	Excess and obsolete electronic components such as semiconductors, capacitors, diodes, amd transistors. (OEM/CEM stock only)	Global
Fiber Optics Online	Fibre optical products	Global, with focus on North America
First index	Industrial custom-manufactured parts and assemblies within different categories such as: machining, casting, forging, sheetmetal, medium and heavy fabrication, plastic molding, electronics, etc.	Global
Global Sources	A broad range of products and services such as computer products, electronic components, electronics, fashion accessories & supplies, timepieces, gifts & home products, hardwares, security products, and telecom products.	Focus on China and Asia
GlobalSpec	Electrical, mechanical and optical components	Global with special focus on North America
GovSupport Online	Cage code listed supplier parts and inventory	North America
IT Reseller Online	IT accessories and machines designed to be integrated in a larger system, e.g. portable data terminal, printing products, scanners, and others.	North America
Lighting86.com	Lighting products, such as: residential lamp, outdoor lamp, holiday lamp, illumination, light source, light fittings, etc.	China
Lightxchange	Raw materials and semi-finished products in the lighting industry	Global
Materialboerse.de	New and surplus electronic, optoelectronic and mechanical components	Global
Mectronic	Electronics and mechanical components and services	Global with focus on USA
NetCOMPONENTS	Active, passive and electromechanical component line items including integrated circuits (ICs), semiconductors, diodes, transistors, memories, microprocessors, capacitors, resistors and much more.	Global
NexMart	Products from the tool and fittings industry such as sanitation/heating/climate, metal fittings, tools and building materials	Europe

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E-marketplace	Products & Services Traded	Geographic Focus
PartMiner freetradezone	Electronic components	Global
PartsForIndustry	New and used industrial inventory, parts and equipment such as Electrical/Electronics, Hydraulics & Pneumatics, Process Equipment and motors.	Global with a focus on North America
PCB-Broker	PCB-Broker is a trading platform for unfinished PCBs - printed circuit boards	Global
Photonics Online	Laser, optics, optoelectronics, fiberoptics, and imaging products.	Global, with a focus on North America
Powersource Online Inc	New and used computer parts, systems, peripherals, printers, and networking equipment.	USA and Canada
Premises networks.com	Cables, optic fibers, routers, switches, hubs, media access control devices, etc.	Global, with a focus on North America
RFID SolutionsOnline	Radio Frequency Identification (RFID) products such as antennas, printers, readers, servers, and software	North America
Semiconductor Online	Supplies and equipment for semiconductor manufacturing, ie silicon wafers, chemicals gases, test and measurement equipment, etc.	Global, with focus on North America
Test and Measurement.com	Resource for professionals in the test and measurement industry. Information on instrumentation equipment, automated test equipment, oscilloscopes, ATE, data analysis and more.	Global with focus on USA
The Broker Forum	Electronic components	Global
Tooling Online	All manner of industrial and high technology tools	Global, with focus on North America
Tradeplace	Household appliances and consumer electronics industry.	Europe
USBid.com	Electronic components (diodes, passives, memories etc)	Global
Vendorbase	Aftermarket, excess and re-marketed technology products including networking devices, memory, computer systems, accessories, storage, cameras and others.	Global with focus on USA
Virtual Chip Exchange	Active & passive electronic components and all kinds of semiconductors	Global
Wireless Workforce Online	Mobile and wireless technology, e.g. notebooks, portable printers, hand held computers.	North America
ACE Suppliers	IT, communication, electronics/electrical, security and safety products as well as electronic components and productive equipments	Asian manufacturers looking for International buyers
Adibank-Ptl.com	Electrical and electronic components and items such as electronic voltage controllers, isolation transformers, insulators and metal conduits.	Spain

Source: eMarket Services Directory, October 2005

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3. 2 E-marketplace headquarter location

Country	Headquarter
USA	27
Germany	6
Taiwan	3
Singapore	2
China	2
United Kingdom	1
Turkey	1
Sweden	1
Spain	1
Netherlands	1
Canada	1

Source: eMarket Services Directory, October 2005

Please note that 11 of the 27 e-marketplaces in the USA are a part of the Vertmarket's network of 68 online marketplaces.

3. 3 Significant e-marketplaces in the sector

Bizipoint (www.bizipoint.com)

Bizipoint is a Chinese e-market for the electronic and computer industry, endorsed by the China Electronic Chamber of Commerce. Established in Hong Kong in 2000, Bizipoint has a more than 21,000 registered users from 156 countries and works as a platform for companies looking for new buyers and sellers worldwide. Companies include: China IT Sources, Doorga Importers, Laijen Opto-electronics Technology Co., Ltd., and Niche Technologies Services.

Converge (www.converge.com)

Converge provides semiconductors, electronic components, computer products and networking equipment. The e-market has a network of more than 6,500 trading partners with over 28,000 contacts in 139 countries. Since their establishment in 1980 in USA, Converge has become a large technology exchange platform for many important market players worldwide. Companies include: CTX, Cisco, Apple, Intel, NEC, Philips, Packard Bell, IBM, Acer Communications, Compaq, and Belkin.

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DRAMeXchange (www.dramexchange.com)

Established in 2000 in Taiwan, DRAMeXchange offers DRAM (Dynamic Random Access Memory) and random access memory (RAM) for companies in memory chip production, memory module fabrication, systems integration and distribution. With a variety of services provided, DRAMeXchange assists large companies all over the world in sourcing from suppliers. They also help the companies in optimising the level of efficiency in handling of transactions. Companies include Motorola, Alliance, Kingston Technology, Genesis, Sun, NEC, Intel, Samsung, Merrill Lynch, and Morgan Stanley.

4. Information sources

- **E-business W@tch**
<http://www.ebusiness-watch.org/resources/electronics/electronics.htm>
- **eMarket Services**
www.emarketservices.com
- **Migration in production benefits Eastern Europe**
<http://www.electronicweekly.co.uk/Articles/2005/09/07/36270/MigrationinproductionbenefitsEasternEurope.htm>
- **The 10 most important business developments**
<http://www.reed-electronics.com/eb-mag/article/CA6279561?pubdate=11%2F1%2F2005>
- **Think locally, manage globally**
<http://www.reed-electronics.com/eb-mag/article/CA6261843.html?industryid=43698>

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