

WORKING CONDITIONS AND ECONOMIC DEVELOPMENT UNDER PRESSURE IN ICT PRODUCTION IN CENTRAL AND EASTERN EUROPE



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Table of Contents

1. Introduction.....	3
2. CEE and the global ICT industry	5
2.1 The global ICT industry – flexibilised network production	5
2.2 The global ICT industry during the economic crisis.....	6
2.3 The effects of the economic crisis on ICT employment.....	6
2.4 ICT industry in CEE – demise and re-emergence	8
2.5 ICT production in CEE at a glance	9
3. Hungary: Upgrading ‘factories on wheels’	14
3.1 The late 1980s: From state socialism to transformation	15
3.2 The electronics revival in the 1990s and the emergence of an enclave economy	15
3.3 The burst of the New Economy bubble	17
3.4 ICT manufacturing industry at a glance.....	19
3.5 Working conditions in the ICT industry	20
3.6 Conclusion	23
4. Romania: An emerging low-cost location for ICT?	24
4.1 From the birth of the electronics industry to the collapse of state socialism	24
4.2 The electronics industry after 1989	24
4.3 The ICT industry today – new competitor in Europe?	25
4.4 Working conditions in ICT manufacturing	29
4.5 Case study on Celestica: Company without workers’ representation	32
4.6 Conclusion	36
5. Czech Republic: Computer production hub.....	38
5.1 The breakdown of the most advanced ICT industry after 1989.....	38
5.2 From the New Economy crisis to the global economic crisis	38
5.3 Migrant workers in the Czech Republic’s ICT industry	40
5.4 Foxconn – a Taiwanese electronics giant in the Czech Republic	40
5.5 Conclusion	44
6. Conclusion.....	45
Appendix: Country Profiles	47
Bulgaria: Renaissance of the hard disk manufacturer?	47
Estonia: Outsourcing location for Scandinavian telecommunications	47
Latvia: Inventor of the Minox	48
Lithuania: Declining TV set maker	48
Poland: TV set maker of Europe	48
Slovakia: Car and consumer Electronics	49
Ukraine: A Mexico for Europe?.....	49
Russia: Future growth market?.....	50
Bibliography	51

Figures:

Figure 1: Mapping CEE's electronics industry	10
Figure 2: Exports of ICT goods from selected CEE countries in 2007	13
Figure 3: The dominance of foreign owned companies in electronics manufacturing in Hungary	16

Tables:

Table 1: Examples of major employment reductions by ICT companies	7
Table 2: Major ICT investments in Romania 1998-2009	28

Information Boxes

Box 1: Elcoteq in Estonia – an example for gendered and ethnical segmentation	9
Box 2: Dell in Poland	12
Box 3: Videoton – shifting divisions of labour	14
Box 4: The rise of the 'Pannonian Tiger'	18
Box 5: Lobbying of ICT companies to preserve tax advantages	19
Box 6: Wages and relocation pressure in a Hungarian ICT plant	22
Box 7: Building Nokia-Village in Jucu – a success story?	26
Box 8: Temporary agency work in Romania	31
Box 9: Trade unions in Romania	32
Box 10: Economic background information on Celestica	34
Box 11: The story of a female operator	37
Box 12: LG.Phillips CRT plant in the Czech Republic	39

List of Abbreviations

CEE – Central and Eastern Europe
CM – Contract Manufacturer
COMECON – Council for Mutual Economic Assistance
EMS – Electronic Manufacturing Services
EPZ – Export Processing Zone
FDI – Foreign Direct Investment
ICT – Information and Communications Technology
IFTZ – Industrial Free Trade Zone
OBM – Original Brand Manufacturer
R&D – Research and Development
SEZ – Special Economic Zone
TAW – Temporary Agency Worker
TNC – Transnational Corporation

Introduction

Information and Communication Technology (ICT) presents itself as a modern industry. The fact that its products – such as desktops PCs, notebooks and mobile phones – connect people all over the world renders it a symbol of globalisation. Every day, we are offered new and innovative technology that promises to make our work and leisure experiences faster, better and more enjoyable. However, this image obscures the often hidden, darker side of the production processes of the industry. Production of ICT hardware thrives on highly flexible, global networks, which have to respond to ever-changing requirements. This entails a continuous search for low-cost manufacturing sites. As a result, the division of labour is no longer fixed, but constantly restructured along low-cost and high-profit lines. Manufacturing workers are often forced into exploitative conditions and are exposed to the risk of losing their work to another cheaper production site at any time.

The division of labour in the ICT industry reflects the division between old industrial countries and developing as well as transition countries gained importance at the sector. The former are characterised by knowledge-based work with a high share of the added value. In the latter countries labour-intensive production with a low level of added value is concentrated. This separation is mainly the outcome of outsourcing processes of former brand companies' production to Contract Manufacturers (CMs) that facilitate low-cost manufacturing sites across Asia, Mexico and Central and Eastern Europe (CEE).¹ However, these production locations are not just the extended workbenches of the global North, but increasingly complex production steps are being relocated as well.

In many cases the working conditions at ICT manufacturing plants legitimate to talk of mod-

ern 'High-Tech Sweatshops' (WEED 2007). Violations of fundamental labour rights emerge as a common phenomenon whereby the power of workers is limited by the prohibition of independent trade unions or the restriction of their instruments and actions. Besides problems in the area of freedom of association and collective bargaining common issues are relatively low wages, working time and intensity and precarious employment relationships. However, there are important differences from the sweatshops of old industries such as the clothing industry: ICT is mass production at a high technological level that requires a very clean and modern surrounding. Beneath this surface, extremely high levels of health risks occur due to the use of toxic substances. The health risks associated with ICT production have accompanied the relocation of production. In the 1980s and 1990s massive health problems occurred, particularly in the semiconductor industry in the United States (Hawes and Pellow 2006: 120ff), as well as in Scotland (McCourt 2006: 139ff). Recently, a young worker in Korea died of leukaemia in *Samsung's* production plant after being exposed to toxic substances. At *Samsung* there are now 23 documented cases of workers who suffered from blood cancer, nine of whom have already died (Stop Samsung Campaign 2010). The severe health problems that affect many workers in the production of ICT hardware are a central issue concerning the industry's working standards.

In the first years of the new millennium, developmental organisations in Western European countries started to draw attention to the working conditions in the ICT industry.² They focused mainly on Asia and Mexico; the European campaign *procureITfair* concentrated on China as the world's largest exporter of ICT goods (UNCTAD 2009: 64). This led to a paradoxical situation: Today there is more awareness for working conditions in China than in neighbouring countries of

1 In this report the term CEE refers to the wider CEE region. The term CEE is often used referring only to the ten countries that joined the EU in 2004 and 2007: Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovakia and Slovenia. This report covers all of them except for Slovenia plus two non-EU-member states, Ukraine and Russia.

2 See for example the CAFOD campaign *Clean up your Computer* in the UK, the *High Tech – No Rights?* campaign from *Bread for all* and *Fastenopfer* in Switzerland, the European campaign *MakeITfair* and the German project *PC Global*, launched by WEED in 2005.

CEE, which are playing a crucial role in production for the European market. The Czech Republic, for example, is the computer hub for the Western European market. This is why WEED decided to start research on ICT production and working conditions in the CEE region.

The objectives of this report are to achieve a better understanding of the role that CEE plays in the global division of labour in ICT, of the main problems regarding working conditions and on how working conditions are influenced by brand companies' permanent restructuring of their global production networks. This last factor was highlighted against the background of the global economic crisis and its effects on the ICT industry. The report starts with a short overview of the global ICT industry and the current economic crises and introduces key characteristics of the ICT industry in CEE, based on country profiles that can be found in the appendix of the report. In cases where no detailed information on the ICT subsector was available, the report refers to the conditions in the electronics industry as a whole. In the second part, three countries are

analysed in more detail: Hungary, Romania and the Czech Republic. The third chapter is on Hungary which was the first country that benefited from relocation of production to CEE and is still the most important producer country in the region. This chapter focuses on the upgrading process in Hungary and outlines its effects on working conditions. The fourth chapter deals with Romania which emerged as an important competitor to countries such as Hungary because of its lower wages. In a case study that is based on interviews with workers from the CM *Celestica*, the precarious working conditions and the effects of the economic crisis are discussed. The fifth chapter takes a closer look at the ICT industry in the Czech Republic. It is of particular interest due to its comparatively large computer industry and, regarding its working conditions, because of its widespread use of migrant workers in the last few years. A brief analysis of the Taiwanese CM *Foxconn* illustrates the challenges faced by migrant workers who are often hired by temporary employment agencies. The last chapter concludes.

CEE and the global ICT industry

This chapter gives a short introduction to the global Information and Communication Technology (ICT) industry and the impacts of the economic crisis. Furthermore it provides an overview of three phases of ICT production in Central and Eastern Europe (CEE) and characterises different groups of countries. Detailed information on CEE countries can be found in the appendix as well as in the subsequent chapters of Hungary, Romania and the Czech Republic.

2.1 The global ICT industry – flexibilised network production

The ICT industry produces a variety of goods such as desktop PCs, notebooks, touch screens, office equipment, mobile phones and other communications equipment. Most of these products are not produced by large, well-known ICT brand companies. According to estimates around 70 to 75 percent of the production is by now outsourced to Contract Manufacturers (CMs) (Gallagher and Zarsky 2007: 77; Holdcroft 2010). CMs are also called Electronic Manufacturing Services (EMS) firms, indicating the typical development that manufacturing is increasingly organised as a service industry (Hürtgen et al. 2009: 56). They design, test, manufacture, distribute and provide return and repair services for electronic components, but also assemble whole products for the brand-name owners – also known as Original Brand Manufacturers (OBMs) – like *Nokia* or *Hewlett-Packard (HP)*. While the EMS providers are often unknown to the greater public, they are large Transnational Corporations (TNCs) that have grown significantly.³ Leading EMS companies such as *Flextronics* or *Foxconn* employ hundreds of thousands of workers.

Outsourcing to foreign affiliates of OBMs located in developing countries started in the 1960s (Henderson 1989). Yet, the trend towards low-cost locations for production has been particu-

3 Another type of CMs are Original Design Manufacturers (ODM). In contrast to EMS firms they also own the design of the product that they supply to the brand companies.

larly pronounced since the 1980s and accelerated throughout the 1990s. This increasing relocation is strongly connected to the rise of EMS. They feature a high level of standardisation and seek production sites with low labour costs. For instance, *Flextronics* praises itself as ‘a global industry leader in low-cost production capabilities’ with roughly 76 percent of its manufacturing capacity located in low-cost regions (Flextronics 2010: 103). Also, EMS companies appear to have a preference for employing young female workers, very often migrants or members of ethnic minorities (Gallagher and Zarsky 2007: 77; see Box 1 on *Elcoteq* and Chapter 5.4 on *Foxconn*). On the international level this entailed a shift from historically important locations such as Japan and the US to Malaysia, Singapore, South Korea, Taiwan, Thailand, and the Philippines. Further relocations to Mexico and CEE could be observed beginning in the mid-1990s. In the aftermath of the crisis of the New Economy in 2001, China experienced a great boom. Today it is the country with the highest concentration of mass production plants for information technology worldwide (Hürtgen et al. 2009: 13). In search of low-cost locations, companies are attracted to Export Processing Zones (EPZs)⁴, established by governments to expand their competitive advantages. In the world’s 3,500 existing EPZs, unionisation is often hindered or even forbidden and the zones thus contribute massively to the demolition of labour law. After the clothing industry, the electronics industry is the second most important sector in EPZs (Singa Boyenge 2007).

Even though dozens of smaller companies are involved in the production process of ICT goods, the power among brand firms and EMS compa-

4 There are a variety of types of EPZs, including (industrial) free trade zones, special economic zones, bonded warehouses, free ports, customs zones and maquiladoras. In this report we will refer to them as Industrial Free Trade Zones (IFTZs) (in the case of Hungary), Special Economic Zones (SEZs) (in the case of Poland) and Industrial Parks (in the case of Romania). While they have different characteristics they are all ‘industrial zones with special incentives set up to attract foreign investors, in which imported materials undergo some degree of processing before being re-exported’ (ILO website 2007).

nies is highly concentrated: The five largest computer companies (*HP, Dell, Acer, Toshiba* and *Lenovo*) make around 55 percent of the computer industry's turnover (IDC 2009), and 75 percent of the mobile phone industry belong to *Motorola, SonyEricsson, Nokia, Samsung, Research in Motion* and *LG* (Gartner 2010). There is also a substantial market concentration within the EMS industry with *Foxconn, Flextronics, Celestica, Sanmina-SCI* and *Jabil* being the five major EMS companies (Evertiq 2010a).

The production of ICT goods includes very complex and extensive supply chains. A computer notebook, for example, consists of around 1,800 to 2,000 component parts (Manhart and Grieshammer 2006: 24) that are being produced by different companies all along the various levels of the supply chain and finally assembled by CMs. Hence, these complex production networks involve hundreds of different formally independent suppliers. (Overeem 2009: 19). Notwithstanding the complexities, brand companies are able to control these networks and the manufacturing of their products by CMs. They make the important decisions on prices, delivery times and even occasionally on the production location (Hürtgen 2007: 111). CMs, in turn, have become important production TNCs that try to channel the (cost) pressure as well as the flexibility demands from brand firms further down to the bottom of the supply chain (de Haan and Schipper 2009).

The workers are the ones who bear the hardest consequences of this system. Through many country studies a few general trends can be identified: low wages, excessive working hours, poor protection of workers, including high health risks, an authoritarian form of managerial regime and violations of workers' rights to organise and bargain collectively as occurred for instance in 2010 at the facility of *IBM* in Bulgaria (Gardner 2010b). Flexibility is the keyword that controls the daily life of the workers: Flexibility in wages, working time and hours, production rhythm and speed as well as flexibility regarding their employment relationships as reflected in limited contracts and their status as Temporary Agency Workers (TAWs). These conditions result in a high level of job insecurity and precarious working conditions for the workers (Hürtgen et al. 2009; Smith et al. 2006; Chan and Ho 2008; Barajas 2009; SACOM and Bred for all 2008; SACOM 2009; Nordbrand et al. 2009; ILO 2007).

2.2 The global ICT industry during the economic crisis

The ICT industry is known as a fast-growing industrial sector, realising high profits. However,

the current economic crisis also hit the ICT world due to reduced global demand for ICT products. The crisis had various impacts on the respective subsectors. Some are still suffering losses whereas others are now stabilising again.

The semiconductor manufacturers were the first to be affected by the recession. The utilisation rates of semiconductor manufacturing facilities fell to almost 55 percent in the first quarter of 2009, however, they soon recovered (OECD 2009: 8). It was estimated that by the end of 2009 the total employment of the Top Ten semiconductors would decrease by seven percent compared to 2008 (ibid.: 10).

Until the current crisis, global computer production demonstrated substantial growth figures, with a worldwide PC shipment that totalled 302.2 million units in 2008, marking a 10.9 percent increase from 2007 (Gartner 2009a). But in the last quarter of 2008, PC shipment declined for the first time since 2002 (OECD 2009: 11). In the first quarter of 2009 this trend continued indicating a diminishing demand for computers and electronic devices. PC shipment decreased by 6.5 percent compared to the same period in 2008 (Gartner 2009b). The industry of communication equipment also suffered heavy losses. Growth in handset sales slowed down in 2008 to 3.5 percent. Many communications equipment companies announced job cuts for 2009 (OECD 2009: 13; see Table 1).

In the EMS business the top EMS companies experienced a market share contraction for the first time since 2002, with *Foxconn* (the largest EMS firm) recording a sale increase of only 1.3 percent in 2008. Other EMS companies experienced revenue contractions of up to 32 percent, as in the case of *Sanmina-SCI* (Evertiq 2009b).

The current global economic crisis has had adverse effects on the ICT industry as a whole and some regions were more affected than during the crisis of the New Economy in 2001. However, in general, the consequences and revenue declines have not been as severe as in 2001.

2.3 The effects of the economic crisis on ICT employment

Not only the profits of the ICT industry have been harmed – the impacts of the crisis on employment stability and working conditions have been overwhelmingly negative. Discussion of relocation towards lower cost production locations, including, for instance, Vietnam as well as Romania and the Ukraine, gained momentum during the economic crisis. The threat of relocation weakens the bargaining power of workers and trade unions. Furthermore, worldwide job cuts additionally weaken the

structural power of workers (see Table 1). Global employment of the Top Ten semiconductor firms fell by almost five percent in 2008 compared to 2007 and a further decrease in 2009 was expected (OECD 2009: 11). In the Guangdong province in China, several factories closed down in 2008, causing job losses for hundreds of thousands of employees – mostly migrant workers (GoodElectronics 2008). In Mexico more than 6,000 electronics industry workers were dismissed in the first half of 2009 (Barajas 2009: 6). In the Philippines, where electronics is the major export sector, many companies closed down their facilities and dismissed parts of their workforce. The government reported in 2008 that 60,000 of the 480,000 workers in the electronics sector could be affected (de Haan and Schipper 2009: 17). Besides migrant workers, TAWs were particularly affected by the dismissals, for example, when *Fujitsu* reduced its workforce (OECD 2009: 12).

Moreover, management is using the crisis to put further pressure on wages and working conditions. *Fujitsu* exemplified this practice by ordering a company-wide pay freeze (ibid.) as did the Romanian facility of Canadian *Celestica* (see Chapter 4.5). Wages in Mexico were reduced by ten percent, and the proportion of temporary three-month and monthly contracts out of total contracts increased from 40 to 60 percent (Barajas 2009: 7). In the Philippines an ever-growing number of workers are no longer directly employed by the electronics company they work for,

but are hired through temporary employment agencies, where they are paid less and do not have the same rights and benefits as regular workers (de Haan and Schipper 2009). It can be argued that the crisis is being used as a justification to increase precarious forms of work. Stable employment relationships have been severely weakened during the crisis, especially among women, which form the majority of the labour force in the ICT sector (Ferus-Comelo 2006). The *International Metalworkers' Federation* (IMF) stated that women in the manufacturing sector have been strongly affected by the economic crisis, since they already belong to a group that is precariously employed and receives lower wages (Gardner 2010a).

During the crisis, some governments exacerbated the poor labour conditions. In Indonesia the government pushed for a reduction of the minimum wage (GoodElectronics 2008). In China a similar process took place, whereby the *Guangdong Ministry of Human Resources and Social Security* announced in 2008 that it would suspend the regular upward adjustment of minimum wages for a time due to the economic crisis. The government stated only shortly thereafter that companies not able to pay mandatory social insurance contributions for their workers could apply and delay the payments for up to six months (Nordbrand et al. 2009: 9). In conclusion, the current economic crisis affected the workers in the ICT industry severely, in terms of job losses, decreasing wages and worsening working conditions.

Table 1: Examples of major employment reductions by ICT companies

Company	Home country	Number of employees concerned	Date of announcement
Hewlett Packard	United States	24,600	October 2008
NEC	Japan	20,000	January 2009
Sony	Japan	16,000	December 2008
Panasonic	Japan	15,000	February 2009
AT&T	United States	12,000	December 2008
Pioneer	Japan	10,000	February 2009
Dell	United States	8,900	October 2008
Sprint Nexel	United States	8,000	January 2009
Sun Microsystems	United States	6,000	November 2008
Philips	Netherlands	6,000	January 2009
Ericsson	Sweden	5,000	January 2009
Microsoft	United States	5,000	January 2009
IBM	United States	5,000	March 2009
STMicroelectronics	United States	4,500	January 2009
Motorola	United States	4,000	January 2009

Source: Business Tech CNFT News (2009a) as cited in UNCTAD (2009: 72)

2.4 ICT industry in CEE – demise and re-emergence

The development of the ICT industry in the CEE region can be divided into three phases. The first phase was the specialisation under the *Council for Mutual Economic Assistance* (COMECON).⁵ The second phase was the demise and re-emergence of the ICT industry in the 1990s. The third phase was the restructuring after the crisis of the New Economy in 2001.

During the period of state socialism, the sector was mainly oriented towards military applications (Radosevic 2004a: 271). It was characterised by large conglomerates that employed tens of thousands of people, as did, for example *Mera* and *Unitra* in Poland (Hürtgen et al. 2009: 150). In the framework of COMECON-specialisation, for instance, Bulgaria was mandated with the production of hard disk drives (Linden 1998) while Latvia was specialised in radio-electronic products and equipment (Dyker 1996). Poland, together with East Germany, Hungary and also Bulgaria, was tasked with research and production of computers (Piątkowski 2004). The intention of the agreement was to create synergies and to rationalise a system in which some 30 different types of incompatible computers were produced (Linden 1998). Cheap credits that were invested in the modernisation of the sector in the 1970s induced a short-term economic miracle. However, the technology gap between the CEE and Western states widened again as a consequence of the global downturn in the late 1970s and 1980s and the annulations of several big investment projects by Western partners (Hürtgen et al. 2009: 150). After 1989 the industry in CEE was exposed directly to international competition stemming from North American, Asian and Western European imports, which it could hardly withstand. Also, demand from established COMECON markets was decreasing dramatically as capitalist transformation hit the region. This resulted in a breakdown of the sector: Most former state conglomerates closed or were heavily downsized, while the majority of workers lost their jobs. There are only a few examples of successful transformation, such as the Hungarian company *Videoton* (Radosevic 2004a: 283ff; see Box 3). After this demise Foreign Direct Investment (FDI) drove the sector's re-emergence. Only a few companies, such as *Philips*

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5 The Council for Mutual Economic Assistance (COMECON, also known as CMEA), 1949–1991, was an economic organization comprising the former Communist countries in CEE along with a number of other communist and non-communist states elsewhere in the world. Its key aim was to promote economic development through trade between the centrally planned economies of CEE.

and *Samsung* in Hungary, invested in the first half of the 1990s with the objective of gaining a market presence and being able to cherry-pick the best investment opportunities in the context of privatisation (Hürtgen et al. 2009: 150). The 1990s featured a new trend of the regional organisation of production networks around the key markets of the Triad – Western Europe, Japan and North America (Ruigrok and van Tulder 1995). As flexibility and responsiveness became increasingly important to TNCs locational decisions, low-cost locations close to the key markets became attractive to TNCs. During the first half of the 1990s, EMS facilities in Europe were still focusing on the Western low-cost regions of Ireland, Scotland and Wales. The only exception was the EMS company *Elcoteq*, which opened its Tallinn facility (Estonia) in 1992 (see Box 1). This changed with the boom of the New Economy in the second half of the 1990s and with the rising demand for computers, mobile phones and other ICT products. Now CEE locations also benefited from the outsourcing to EMS companies. Greenfield Investments in CEE became alternatives to the Western production sites (Hürtgen et al. 2009: 154f). Countries that showed substantial growth rates in the sector at that time were above all Hungary but also Poland and the Czech Republic received increasing amounts of FDI in the ICT sector.

This development gained new momentum at the beginning of the new Millennium. The burst of the New Economy in 2001 led to a new round of restructuring and relocations – against a background of an industry that was characterised by overcapacity on a global level. On the organisational level, TNCs shifted further towards fully outsourced manufacturing models and increased outsourcing to CMs (Lüthje and Sproll 2004). Geographically, the quest for the lowest cost resulted not only in closure and relocation of plants located in so-called high cost areas, but also in Western European low-cost regions (Hürtgen et al. 2009: 163) as well as in Mexico, which was confronted with major job losses and relocation of plants to China (Gallagher and Zarsky 2007: 133). The CEE countries benefited from relocation of plants mainly from Western European production sites as well as from the creation of new facilities – for example, by *Celestica* in Romania (see Chapter 4.5), by Scandinavian mid-tier EMS providers *Kitron* and *Note* in Lithuania, by *Inventec* in the Czech Republic and by *Jabil* in Hungary. But at the same time that the region was in the process of establishing itself as an alternative to Western European production locations, it was confronted with new low-cost competition and the relocation of production sites to Asia and in particular to China (Hürtgen et al. 2009: 163ff; see Chapter 3).

Box 1: Elcoteq in Estonia – an example for gendered and ethnical segmentation

The heavily export-oriented Estonian ICT sector is dominated by the telecommunication segment and in particular by the importance of the operations of *Elcoteq*, which have recently been taken over by *Ericsson*. Initially from Finland, *Elcoteq* is the largest European EMS company and a key supplier to telecommunication OBM, especially *Nokia* and *Ericsson*, which account for the majority of *Elcoteq*'s sales. The company was by far the biggest player on the Estonian ICT landscape and used to be the single most important exporter of Estonia, contributing at times 15 to 20 percent to Estonia's total exports (Kalvet 2004; Baltic Business News 2004). As *Elcoteq* faced heavy losses in 2008 it decided to close a number of plants, including plants in Romania, Russia and Estonia, in order to consolidate production. Most of the Tallinn operations were sold to *Ericsson* in July 2009 (Evertiq 2009c). However, *Elcoteq* has recently secured a major contract with Chinese *Huawei* and is again increasing its presence in Estonia (Baltic Business News 2010).

Until recently, its two Estonian plants in Tallinn employed between 3,000 and 4,000 people. Between 70 to 80 percent of all employees were women aged 30 to 40 years, mostly from the Russian speaking minority. This is mainly due to *Elcoteq*'s active search for workers outside of Tallinn as living costs and thus labour costs have been on the rise in the capital before the onset of the economic crisis. Hence, it was increasingly difficult to find workers for the monotonous work at the assembly lines and *Elcoteq* started to recruit workers from northeast Estonia, an area with relatively high unemployment and low income levels. Usually, these women did not have any special skills or education. They accepted the wages and working conditions offered by *Elcoteq*, which did not appeal to workers from Tallinn and surroundings. Furthermore, these female migrant workers are generally scared of losing their job and thus reluctant to organise in trade unions (Eamets 2008; EIRO 2009).

2.5 ICT production in CEE at a glance

Notwithstanding the debate about relocation from Western European to CEE countries, it has to be mentioned that a large share of ICT export goods is still captured by Western European countries. According to international trade statistics, Western European countries exported nearly six-fold as much as the CEE region – in value terms (UNCTAD 2009: 117). But the CEE region still gains economic significance. In 2007 Hungary and the Czech Republic were part of the Top 20 exporters of ICT goods worldwide. While Slovakia, Poland, the Czech Republic and Hungary are gaining market shares, many Western European countries such as Sweden, Ireland, France and UK are losing shares (UNCTAD 2009: 64f). It is no surprise that the CEE region increases in importance in particular in the area of EMS activities because the re-emergence of its ICT industry was strongly connected with the boom of EMS investment in the region. According to a market research report this development continued and in 2008 the CEE countries accounted for over the half of European EMS revenues. The report noted, however, that EMS revenues in the CEE

were forecasted to decline by 17 percent in 2009 because companies have cut back production in reaction to the economic crisis (Reed 2009a).

The high significance of EMS production is also indicative of the role in the global division of labour. Investing in CEE gives companies the opportunity to tap the cheap, but skilled, workforce in geographic proximity. This is not only a competitive advantage over Western European locations, but possibly even over China, as Michael Marks, former Chief Executive Officer from *Flextronics*, pronounced: *'Electronics production may shift closer to consumer countries as manufacturing costs rise in Asia. If the China Yuan and Malaysia Ringgit appreciate, manufacturing costs there will increase in dollar terms, potentially deterring companies who are rushing to build factories there. I think China is overdone.'* (Custer 2005 as cited in Hürtgen et al. 2009: 114)

While company strategies are important in explaining the development of the ICT sector in CEE, it is important to highlight the political-economic context of the EU enlargement in the 1990s as well. In contrast to earlier enlargement rounds, EU policies in the 1990s reproduced spatial inequality and thus did not support the modernisation potentials of the economies, but

Figure 1: Mapping CEE's electronics industry
Country profiles boxes

Poland:

Major Companies: Flextronics, Jabil, Dell (now continued by Foxconn), LG, Sharp, Toshiba
Employees in ICT industry: 64,099
Share of ICT in total manufacturing turnover: 3.25 %
Average gross monthly wages in electronics: € 720

Slovakia:

Major Companies: Flextronics, Samsung, Sony, Panasonic, Enics
Employees in ICT industry: 21,891
Share of ICT in total manufacturing turnover: 11.22 %
Average gross monthly wages in electronics: € 562

Czech Republic:

Major Companies: Foxconn, Flextronics, Celestica, Panasonic, Hitachi, Asustek
Employees in ICT industry: 53,462
Share of ICT in total manufacturing turnover: 7.92 %
Average gross monthly wages in electronics: € 734

Hungary:

Major Companies: Foxconn, Flextronics, Jabil, Sanmina-SCI, Elcoteq, Nokia, IBM, Videoton, Venture, Orion, Hajdú, Philips, Siemens, Samsung, Sanyo, Sony, Zollner
Employees in ICT industry: 63,247
Share of ICT in total manufacturing turnover: 18.28 %
Average gross monthly wages in electronics: € 714

Romania:

Major Companies: Flextronics, Celestica, Benchmark Electronics, Nokia, Alcatel-Lucent, Intrarom,
Employees in ICT industry: 27,180
Share of ICT in total manufacturing turnover: 2.91 %
Average gross monthly wages in electronics: € 392

Bulgaria:

Major Companies: Epiq Electronic, DZU (subsidiary of Videoton), SET, Melexis, Datecs
Employees in ICT industry: 10,214
Share of ICT in total manufacturing turnover: 1.2 %
Average gross monthly wages in electronics: € 231





Estonia:

Major Companies: Elcoteq (now continued by Ericsson), Enics, Ensto, Incap, Note, Scanfil

Employees in ICT industry: 6,450

Share of ICT in total manufacturing turnover: 5.11 %

Average gross monthly wages in electronics: € 690

Latvia:

Major Companies: VEF Radiotehnika, Alfa Rpar, Axon, Hanzas Elektronika, Saf Tehnika

Employees in ICT industry: 1,672

Share of ICT in total manufacturing turnover: 1.44 %

Average gross monthly wages in electronics: € 567

Lithuania:

Major Companies: Siauliu Tauro Televizoriai, Teltonica, Vilniaus Ventos Puslaidininkiai, Kitron

Employees in ICT industry: 3,833

Share of ICT in total manufacturing turnover: 1.49 %

Average gross monthly wages in electronics: € 539

Russia

Russia:

Major Companies: Foxconn, Jabil, Mikron, Angstrom, NEC, Alcatel-Lucent

Employees in ICT industry: no data available

Share of ICT in total manufacturing turnover: no data available

Average gross monthly wages in electronics: € 375

Ukraine

Ukraine:

Major Companies: Flextronics, Jabil, Videoton

Employees in ICT industry: no data available

Share of ICT in total manufacturing turnover: no data available

Average gross monthly wages in electronics: € 183

Sources:

Companies: Amadeus (2010); Evertiq (2008a); own research on company websites

Employees and share of ICT in total manufacturing turnover in 2008: Eurostat (2010)

Average gross monthly wages in the Electronics industry in 2007: WIIW Handbook of Statistics (2009)

Box 2: Dell in Poland

In January 2008 *Dell* opened a plant for the production of desktop and notebook computers and servers in the Łódź region. The site was thought to create 3,000 jobs in a structurally weak region characterised by high unemployment rates. In December 2008 the *European Commission* launched formal investigations to determine whether the public money *Dell* would receive from Polish authorities was in line with the EU state aid framework. In September 2009 the *European Commission* authorised € 54.5 million of regional aid (based on projected total investments of € 189.58 million), which the Polish authorities intended to grant to *Dell* (Evertiq 2009e). As part of its global restructuring efforts in the context of the economic crisis *Dell* announced to sell the plant to *Foxconn* (Evertiq 2009f).

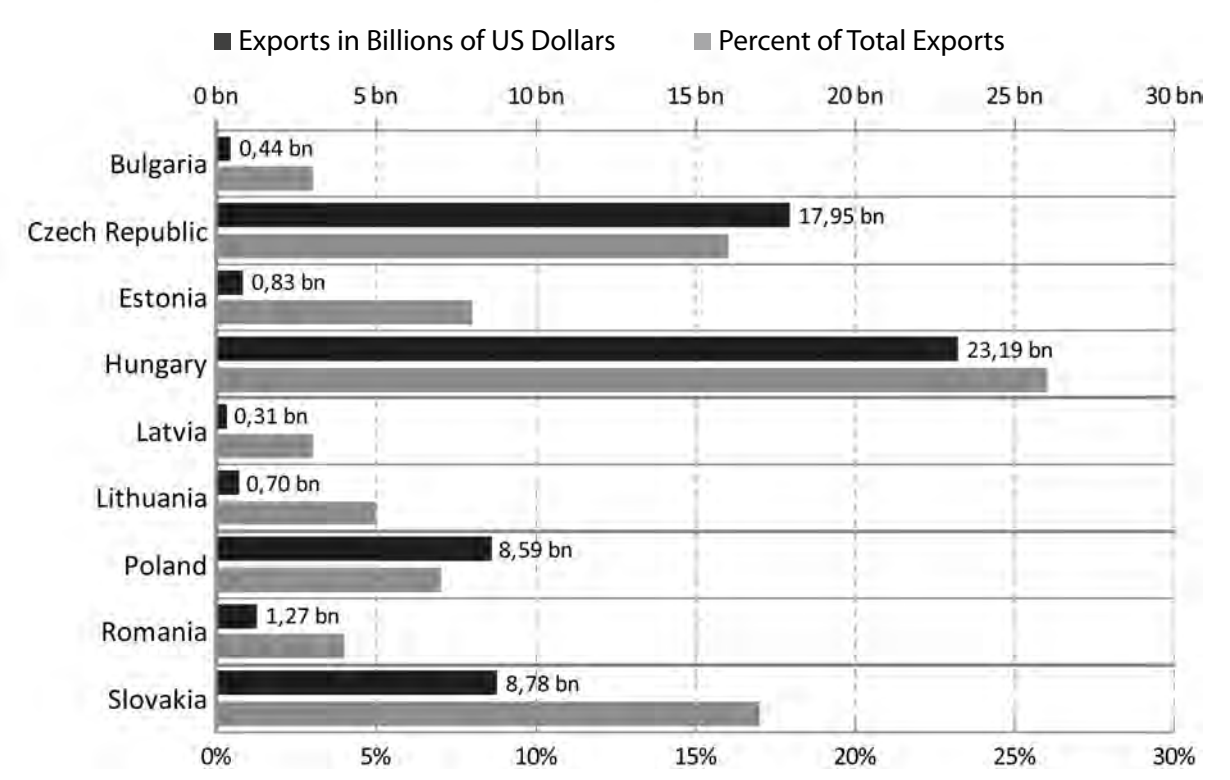
facilitated the creation of an extended workbench. Also, given their post-socialist legacy most governments in these countries were leaning towards market-liberal policies. The founding of EPZs by the governments of Poland and Hungary, for instance, has to be understood in this context (see footnote 4). With the objective of attracting FDI, they offered subsidized infrastructure, cheap land and tax allowances. However, the positive impact of these investments often remained below expectations and the desire to build up local clusters failed in many cases (Hürtgen 2007: 109). Some countries still managed to profit from the trend of relocation and upgraded parts of their economy (see Chapter 3). In a very simplified manner, three groups of ICT production countries can be distinguished: In the first group, comprising Hungary, Poland, the Czech Republic, Slovakia and to some extent Estonia, there are well-established production sites, producing important amounts of ICT export goods (see Figure 2). The ICT share in total manufacturing turnover accounts – with the exception of Poland – for more than five percent (see Figure 1). Hungary emerged as the largest electronic manufacturing location with a 30 percent share of the CEE production in 2008 (Reed 2009b). Ranking right behind it is the Czech Republic. Although Hungary and the Czech Republic have developed a rather diversified production profile, a relative specialisation on individual subsectors can be observed. Hungary has a relatively high share of telecommunication production – related among others to the activities of *Nokia* and *Foxconn* – while the Czech Republic is the European computer hub. Around 40 percent of all computers sold on the Western European market are finally assembled in the Czech Republic (see Chapter 5). Other countries in the first group have ICT sectors primarily dominated by single subsectors. In Estonia the industry is dominated by the telecommunication segment and by the former *Elcoteq* (now owned by *Ericsson*) plant. Poland has become the

TV set maker of Europe over the last decade. It is estimated, that in 2010 approximately every second TV sold in Europe will be produced in Poland (PAIIZ and PricewaterhouseCoopers 2010: 33). In the case of Slovakia the sector is divided into consumer electronics and electronic suppliers strongly tied to the Slovakian automotive industry.

Romania and the Ukraine can be subsumed under a second group. The ICT industry in these countries has remained weak after capitalist transformation and is still on a low level. Recent investments, however, have fuelled expectations that they might become more important. So this group of newcomers competes with the countries of the first group for FDI. Today, Romania is one of the fastest-growing EMS production sites in CEE and is considered by many EMS executives to be equivalent to operating in China, in terms of total landed costs (Evertiq 2009d). In comparison with the Ukraine, the political situation in Romania is more stable. Some observers nevertheless see the Ukraine as a future ‘Mexico for Europe’ – a low-wage industrial power horse in Europe’s backyard that can compete with China and India (Emerson 2006). In this division of labour the Ukraine could ensure high-volume system assembly, but also produce components for final system integration in the Czech Republic, Hungary and Poland. For instance, *Flextronics* could produce components at its Ukrainian site for *Dell* systems integration in Poland (Hannon 2006).

The third group, including Bulgaria, Latvia and Lithuania, as well as Russia, comprises those countries whose ICT industries have remained a marginalised part of the manufacturing industry after the breakdown of communism, in spite of some signs of recovery. Russia’s political economy and related insecurities set it apart from the other EU member countries of this group. Although there have been some investments since the late 1990s, industry analysts are still cautious about Russia’s potential, both as an export platform and as a new market (iSuppli 2009).

Figure 2: Exports of ICT goods from selected CEE countries in 2007



Source: UNCTAD (2009: 117); UN Comtrade (2010)

3

Hungary: Upgrading 'factories on wheels'

As early as the 1970s socialist Hungary started its integration into the capitalist world market. This process significantly intensified after the collapse of state socialism in the 1990s when Hungary's high-tech sector attracted a great amount of Foreign Direct Investment (FDI). This policy appeared to be successful at first and Hungary benefited from the general relocation of electronics production from the West to the East at the time.

But was this really a Hungarian economic success story, or rather the story of an enclave economy built up over the last 20 years, whose position is threatened by continuous pressure to relocate to other CEE countries and China? This chapter traces the historical development of the Hungarian electronics industry and discusses some of the consequences for workers and working conditions in this sector.

Box 3: Videoton – shifting divisions of labour

Videoton is one of the rare examples of a domestic electronics firm in the CEE region that survived the collapse of state socialism. It provides a good example of the dynamic nature of global production networks and the shifts in the division of labour in the European context. *Videoton* was founded in 1938 and developed into the largest state-owned company in Hungary. Unlike most other electronics firms, it managed the period of capitalist transformation by radically downsizing and focusing on low-wage assembly as an EMS company. By the end of the century it was among the Top Ten firms in Hungary and employed 16,000 workers (Radosevic and Yoruk 2001). Today, most of its employees (total: 8,000) still work in Hungarian plants, but *Videoton* set up a plant in Bulgaria that employs around 1,300 workers and opened another plant in the Ukraine in mid-2009.⁶

Labour costs are a key driver for the eastward expansion. According to *Videoton's* management, labour unit costs in Bulgaria are approximately 50 percent of those in Hungary; in the Ukraine labour is even cheaper. As the cost structure is changing, so are the tasks that are assigned to firms in different locations. For instance, products (e.g. cable loops) that were produced in Hungary ten years ago are now produced in Bulgaria. Most standard electronics components continue to be sourced from Asian firms. At the same time, the production process within Hungary has become more knowledge-intensive. Today around 150 employees are working in *Videoton's* engineering department as compared to zero in 1995. Overall, *Videoton's* management expect a threefold division of labour within Europe: Western Europe will specialise in design, marketing and distribution; 'Middle Europe' (i.e. the new EU member countries of 2004 and 2007) will specialise in engineering and development; Eastern European countries outside of the EU will specialise in labour-intensive production (Wintjes 2008).

⁶ Research on the company website (www.videoton.hu) [Accessed July 11, 2010].

3.1 The late 1980s: From state socialism to transformation

Under the specialisation agreements of the COMECON (see footnote 5), Hungary's task within the electronics industry was the production of mini computers and punch card equipment, a sector that employed thousands of people (Linden 1998). This changed quickly with the decomposition of the Soviet Bloc by the end of the 1980s. On the one hand, former state-owned firms struggled with the collapse of the production and consumption structures established within the COMECON. On the other hand, the opening up of the economy exposed Hungary's electronics sector to strong competitive pressure, in particular from the technologically advanced electronics industries in North America, Asia and Western Europe.

The Hungarian electronics sector could barely withstand this outside pressure and suffered from a heavy recession in the early 1990s, in which production and employment fell sharply. In some cases, as in the area of semiconductors, computers and radio receivers, production stopped almost entirely in the first years of the transformation process (Szanyi 2006). As a result, the majority of firms in the sector went bankrupt. One notable exception that successfully survived by radically changing its profile was the Hungarian firm *Videoton*. After 1989 it downsized its operations substantially and transformed into an Electronic Manufacturing Services (EMS) firm (see Box 3). *Videoton* is the exception, while almost the entire industry disappeared in its old form. The revival of the electronics sector – exhibited by the tremendous growth in production and exports over the last 15 years (OECD 2008; Reed 2009b) – was almost exclusively driven by foreign Transnational Corporations (TNCs).

3.2 The electronics revival in the 1990s and the emergence of an enclave economy

Compared to other Central and Eastern European (CEE) countries, Hungary had an important first-mover advantage in attracting FDI because of its earlier efforts to integrate into the capitalist world market and to open up its economy after 1989 (see Box 3). A key element in this regard was the regulation of Industrial Free Trade Zones (IFTZs) – which can be considered as a form of Export Processing Zones (EPZs) (see footnote 4). The aim

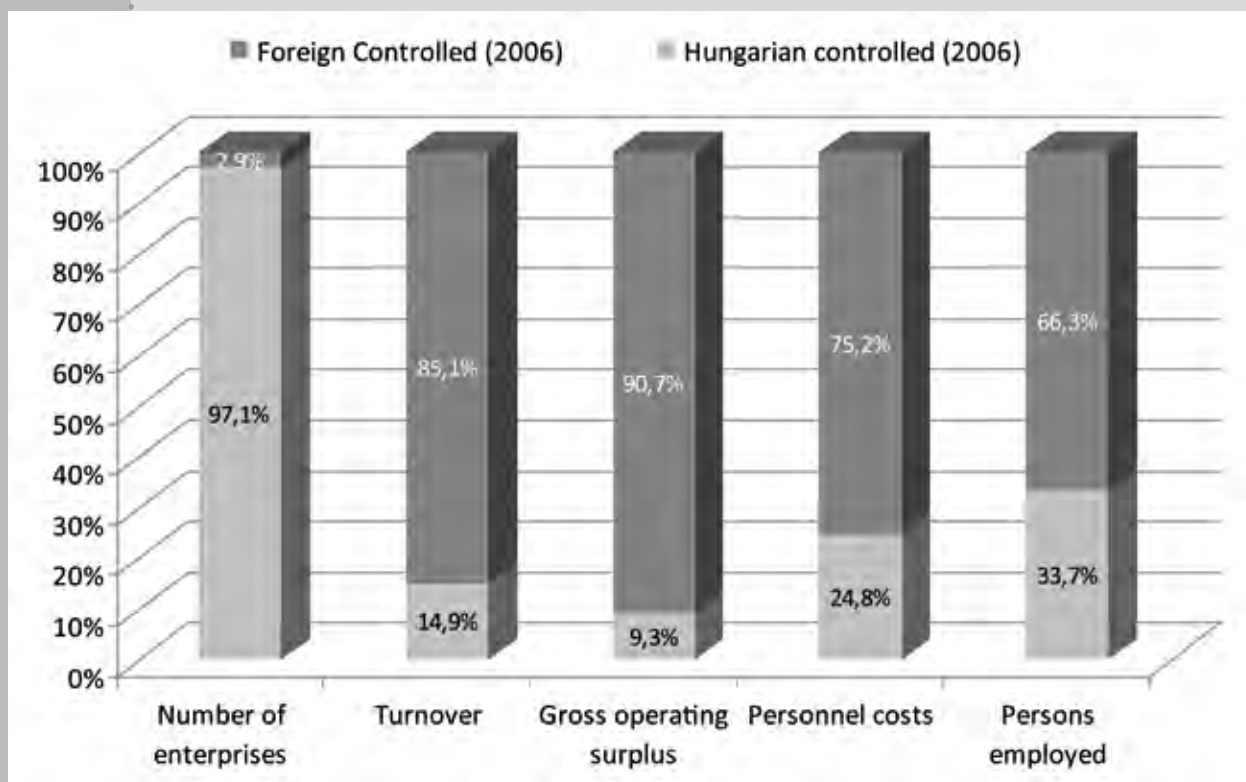
was to attract export-oriented, high technology FDI that would promote economic development in Hungary. Its neighbouring CEE competitors did not implement similar instruments until the late 1990s (Sass 2003).⁷ In contrast, Hungary introduced the first version of the IFTZ regulation as early as 1982. With the fall of state socialism the number of IFTZs increased significantly after 1990. Investors could set up their own zones without geographical restrictions as long as the investment was export-oriented, the investment locations exceeded 2,000 sqm and the company accepted customs control and paid the customs deposit.⁸ If these conditions were met, firms setting up their zone(s) were exempted from paying customs duty and Value-Added Tax, making the IFTZs extra-territorial areas in this regard. Also, firms did not face a currency risk because they could keep their accounts in a foreign currency. Unsurprisingly, this has proven to be very attractive to foreign TNCs that could save on import duties and Value-Added Tax for imported high-value inputs, while taking advantage of the cheap local labour to assemble and export them. The electronics company *Philips* was among the first in the early 1990s to establish IFTZs. Later, their competitors and/or suppliers, such as *IBM*, *Nokia*, *Sony* and *Zollner*, followed their example. By the turn of the millennium, a total of 115 IFTZs were in effect, including about 70 to 75 Greenfield Investments, all of which were foreign-owned. Domestic firms were formally allowed to set up IFTZs, but due to the high requirements (e.g. large investments, export-orientation) they were de facto excluded (Antalóczy and Sass 2001). Tax allowances were considered to be another important factor for investment decisions (Sass 2003). The generally low level of taxation was welcomed by foreign investors in Hungary, as was the reduction of the profit tax to 18 percent in the second half of the 1990s. Again, Hungary had taken the lead among European post-socialist countries with this measure, and other neighbouring countries later followed its example (KPMG 2009).

The various incentives, comprising fiscal, financial and other measures, were without doubt central to Hungary's attractiveness to TNCs. The government's economic policy was, however, only one reason for TNCs to invest in Hungary. The re-emergence of the electronics industry in Hungary during the 1990s must also be analysed in the context of a greater restructuring process of the global electronics industry. A key aspect in this regard was the general search by TNCs for production locations that were geographically close to the main

.....
7 Poland had introduced SEZs in the 1990s but they were in the customs territory. More importantly the regulations associated with them were too cumbersome to successfully attract significant amounts of FDI (Uminski 2001).

.....
8 A custom deposit equivalent to the customs duty of the invoice value is refunded fully or partially if the proof of the export is submitted within the time frame allocated.

Figure 3: The dominance of foreign owned companies in electronics manufacturing in Hungary⁹



Source: Eurostat (2010)

final consumer markets and provided cheap, but skilled, workforces (see Chapter 2.4).

In particular, Western European electronics firms which struggled with the competition from US and Japan seized the opportunity to enhance their overall operations and to extend their production networks in the East (McGowan et al. 2004). *Siemens* and *Philips*, for instance, were heavily involved in privatisation bids in the early 1990s in Hungary and later also invested in Greenfield sites (Linden 1998). Since the mid-1990s, Asian and US TNCs also increased their investments in Hungary (Radosevic 2002).

Besides well-known brand firms such as *IBM*, *Nokia*, *Philips*, *Samsung*, *Siemens* and *Sony*, the investments in the Hungarian electronics sector were driven above all by EMS firms, mostly headquartered in North America. *Flextronics* was the first to move into Hungary when it took over the Austrian firm *Neutronics* and its existing plants in Hungary in 1997 (Businessweek 2000; Ferry 2004). Since then, almost all major EMS firms, including *Foxconn*, *Jabil*, *Sanmina-SCI*, *Solectron*, *Elcoteq* and *Zollner*, set up export

platforms in Hungary to serve the final consumer markets in Western Europe. In this process Hungary attracted the lion's share – more than 60 percent – of total EMS investment in CEE by 2001 (Kalotay 2003 as cited in Sass 2004: 70). *Flextronics* alone had allocated 80 percent of its cumulative CEE-investment to Hungary by 2000 (Szanyi 2006).

Due to these investments Hungary developed a distinguished production and export profile by the end of the 1990s. While neighbouring countries such as the Czech Republic, Poland and Slovakia were still primarily involved in the production of electrical machinery and apparatuses, Hungary was strong in the production of radios, TV sets, telecommunications devices, computers and office machinery (Hanzl 2001; Szanyi 2006). The investments of *IBM* (hard disk drives) and *Nokia* (PC monitors) and the assembly operations of *Flextronics* account for significant growth of this segment during the second half of the 1990s. In particular, *IBM*'s hard disk drive assembly plant, employing up to 5,000 workers in peak times, accounted for a large share of this

⁹ The figure relates to the whole electronics sector according to EU definition and not only to the ICT sector. However, the concentration would otherwise only be more drastic since

there are comparably more domestic firms within the whole electronics sector than in the ICT sector.

increase (Szanyi 2006). *Nokia* and *Siemens* made other important computer-related investments for monitor production, which subsequently led to a co-location of suppliers such as *Ensto* and *Elcoteq* (Linden 1998). *Philips* made several especially important investments in audio and video equipment in Hungary, later followed by *Sony* and *Clarion*, which produced audio equipment (Radosevic 2002). *Samsung* also entered the country at an early stage and expanded its production constantly throughout the 1990s (Linden 1998). *Ericsson* and *Siemens* also entered Hungary in the beginning of the 1990s, as the renovation of outdated telecommunications infrastructure and the creation of mobile networks promised good business opportunities (Radosevic 2002).

Most of the electronics industry was set up through Greenfield Investments by foreign TNCs, particularly in the computer industry (Szanyi 2006). Various indicators on the national level reflect this foreign dominance over the industry. For instance, foreign firms, while making up only three percent of registered firms in the sector, accounted for more than 85 percent of the turnover and for two thirds of the sector's employment in 2006 (see Figure 3). The dual character of the industry is also apparent, when looking at disaggregated employment figures. In the same year, 206 foreign controlled firms in the sector employed on average 476 people, while 6,856 Hungarian controlled firms employed on average seven people (Eurostat 2010). The development strategy pursued by the Hungarian governments led to a structural transformation of the Hungarian economy away from heavy industry and agriculture to a more capital-intensive, export-oriented economy that focused on high-tech manufactured products. The global re-organisation of these high-tech industries – particularly in electronics – was the precondition for this transformation. The policy also seemed to be successful at attracting TNCs and FDI, as the number of TNCs operating in Hungary increased from 6,000 in 1990 to 26,645 in 2000 (Fink 2006). By 2000, TNCs accounted for almost 90 percent of the exports and 80 percent of the imports in the Hungarian economy (Hunya 2001; WIIW 2004). The export-oriented electronics sector and the automotive sector developed into major pillars of the economy and led the economic growth process throughout the 1990s (Szanyi 2006). However, this merely quantitative assessment (for example FDI inflows, growth rates), which put Hungary ahead of its neighbours Czech Republic, Poland and Slovakia offers only a biased assessment of this strategy. In fact, the strong reliance on TNCs as key agents for economic development has promoted an enclave economy. It is characterised by a strong divergence between a domestically-ori-

ented segment, largely populated by Hungarian firms, and an export-oriented segment, dominated by foreign TNCs. This development will be discussed further below. The evolution of the Hungarian electronics industry is a very telling example and highlights the problems of this enclave economy for the regions, communities and workers affected.

3.3 The burst of the New Economy bubble

The dynamics of relocation and restructuring of the electronics industry that were caused by the burst of the bubble of the New Economy (see Chapter 2) were also felt in Hungary and were compound by the domestic context that changed at the same time. In the early 2000s, as wages started to increase more strongly and the specific incentives for TNCs became less beneficial in the light of the EU accession (see Box 5), the expansion of Hungary's electronics industry that had characterised the second half of the 1990s lost momentum (Sass 2004). The first major indicator for this was the closure and relocation of *IBM's* hard disk drive plant to China – the biggest electronics plant in Hungary by that time. The impact was not only felt by the 3,700 employees that lost their jobs in Székesfehérvár, but can also be observed in trade statistics (UNCTAD 2003). The sector's exports dropped by five percent in 2002 as the plant had produced exclusively for export. This decline did not have any negative impact on the trade balance because these high-tech exports were primarily based on using cheap labour to assemble imported parts (Szanyi 2006). The decision of *Flextronics* to relocate the production of *Microsoft's* xBox from the Hungarian site Sárvár to China did also hurt the sector and cost 1,000 jobs (UNCTAD 2003). Also *Flextronic's* decision to move further East into the Ukraine to assemble circuit boards that would supply the Hungarian Nyíregyháza plant, as well as *TDK's* decision to relocate a Hungarian plant to Ukraine, illustrates the unstable character of electronics manufacturing activities (Szanyi 2006). In its *National Development Plan* the government commented on this issue as it noted that '*Hungary's investment attracting capabilities have recently declined in parallel with an increase in labour costs and more intensive competition from low cost economies. This calls for a shift in investment promotion policy: The objective now is to support the attraction and retention of activities representing a high added value and promote their embedding into the Hungarian economy*' (Prime Minister's Office 2003 as cited in Ellison 2005: 19f).

Against this background the focus of Hungary's strategic economic policy gradually moved away from the attraction of footloose investments associated with assembly operations such as *IBM's* hard disk drive plant. This was first reflected in the *Smart Hungary programme* that set out new incentive structures to promote more technology and Research and Development (R&D) activities. For instance, firms investing in R&D were able to deduct up to 200 percent of the costs from their corporate tax base (Ellison 2005). Also, the government funded the establishment of *Cooperative Research Centres* at various universities to foster ties between the business community and academic research (Buzás and Szanyi 2004). Furthermore, the creation of clusters was promoted (Csizmadia et al. 2009). The underlying assumption was that TNCs would engage in emerging innovative clusters that are centred on knowledge-intensive activities and involve local firms and universities, leading to technological spillovers and creating local linkages. Despite this new approach to anchor TNCs in the local economy and to move into higher value-added activities in global production networks of electronics, an assessment of this new approach

comes to critical conclusion. There has been an increasing amount of FDI related to more complex corporate functions in Hungary, including transfers of R&D related activities in electronics from *Nokia*, *Ericsson* and *Siemens* (UNCTAD 2003; Sass 2004). However, it is questionable whether TNCs really transfer substantial – and critical – R&D activities away from their headquarters (Pavlínek 2004). Along the same line, it remains unclear to what extent the expected benefits arising from more knowledge-intensive activities actually materialise (Plank and Staritz 2010b). There is not much evidence to support the claim that domestic firms are benefitting from spillovers (such as know-how transfer) (Ellison 2005; Günther 2005). One reason for this is the fact that electronics TNCs treat technological knowledge as confidential and thus were reluctant to share it with suppliers (Artner 2003 as cited in Szanyi 2006). Equally, the integration of local suppliers into global production networks remained below expectation (Sass 2008). A possible factor might have been the relatively low capabilities of many small Hungarian firms that were built from the remnants of former state socialist companies. It is argued that they

Box 4: The rise of the 'Pannonian Tiger'

Being on the brink of bankruptcy, the Hungarian governments embraced the then dominant neoliberal creed that was promoted by mainstream economists and international institutions (for example the *World Bank* and the *International Monetary Fund*): 'Let the markets do'. Consequently, latter institutions have portrayed Hungary as a role model in this regard (Csillag 2002; EBRD 2001). The rapid opening of the Hungarian economy since the early 1990s was based on its history: Hungary already started to integrate its economy into the capitalist world market in the 1970s. It first allowed foreign involvement in form of joint ventures in 1972, signed the *General Agreement on Tariffs and Trade* (GATT) in the same year and ten years later joined the *World Bank* and the *International Monetary Fund* (Linden 1998). Building on these developments, the post-socialist governments focused on FDI from TNCs as the main basis for promoting economic development and stabilising and restructuring the Hungarian economy in the 1990s (Fink 2006). To attract FDI to the country, Hungary copied much of the development strategy of Ireland, the 'Celtic Tiger': The Hungarian policies included a variety of measures – fiscal incentives (such as tax holidays and tax reductions), financial incentives (such as grants, preferential credit) and other incentives (such as institutional support, IFTZs, Industrial Parks) (Sass 2004). Over the years the set of instruments was adjusted reflecting the changing economic situation in Hungary and the need to adapt to EU regulations. Hence, the prime goal in the early 1990s – to attract as much FDI as possible – gave way to a more sophisticated and nuanced system of incentives. In particular, the government tried to increase performance requirements for TNCs (e.g linking support to employment creation targets and investments in particular regions) to maximise the potential benefits of FDI. While the explicit aim of government policies was the integration of TNCs' operations into the local economy by promoting forward and backward linkages, this endeavour has largely failed (Sass and Szanyi 2004; Sass 2008). Instead, the export-oriented TNCs appear to be islands that are barely embedded in the Hungarian economy (Fink 2006).

lacked the technological and financial strength required by TNCs (Szanyi 2002). Yet, this argumentation seems to have been overestimated and it neglects another key factor that hinders the integration of local firms, namely the strategic interest of TNCs.¹⁰ Their strategies might simply not allow for the integration of local firms. The limited success of the government's programme targeted at Hungarian Small and Medium Enterprises (SMEs) points in that direction. Despite active participation of SMEs and the parallel improvement of their capabilities, TNCs did not generally show interest in these new potential suppliers (Plank and Staritz 2010a). The established supplier relationships in global production networks of electronics act as substantial barriers to entry, since supply contracts are often negotiated on a global level between headquarters. This results in little autonomy for the local management of companies when it comes to deciding on the role of local suppliers. In some cases this led to TNCs repaying public funds, as they could not meet the requirements to involve local suppliers (Interview Sass 2009).¹¹ In short, there were *'very few exceptions, where special circumstances induced multinationals to be active in promoting linkage creation or transferred preparatory knowledge and technology to potential local suppliers'* (Szanyi 2006: 20f).

3.4 ICT manufacturing industry at a glance

Despite the trend of relocation, the ICT sector is still of paramount importance for the Hungarian economy. In 2008, the sector accounted for roughly 19 percent of total manufacturing output and more than eight percent of total manufacturing employment (Eurostat 2010).

As noted above, the Hungarian ICT industry continues to be largely dominated by foreign TNCs. The domestic Hungarian firms generally occupy the lower ranks as second- or third-tier suppliers with some exceptions such as *Videoton* that operate as EMS contractor. In addition to the early entrants of the 1990s, such as *Philips*, many of the major ICT Original Brand Manufacturers (OBMs), including *Samsung*, *Sony*, *Nokia* and *IBM*, have chosen Hungary for their operations (ITD 2007). Furthermore, TNCs in the contract manufacturing business account for the other important share of the sector: *Flextronics* (Budapest, Sárvár, Zalaegerszeg, Tab), *Sanmina-SCI* (Tatabánya, Miskolc), *Jabil* (Tiszaújváros, Szombathely), *Foxconn* (Komárom, Székesfehérvár), *Elcoteq* (Pécs) and *Zollner* (Vác, Szügy). While in the beginning investments tended to be concentrated around the central and north-western regions – reflecting investors' preferences to be close to the home country – the pattern has changed over time. Hence, ICT plants are dispersed more evenly across the country (Sass 2004; ITD website 2010).

Box 5: Lobbying of ICT companies to preserve tax advantages

The Hungarian example shows that incentives such as tax allowances are more than a transitory means to attract FDI to a country. Even years after their establishment international investors are willing and able to use their power to secure their privileged and subsidised status: In the run-up to EU accession the Hungarian incentive system came under pressure. In particular, its fiscal incentives clashed with European competition law and hence, had to be aligned with the *acquis communautaire*. This was met with strong resistance by a global coalition. Individual TNCs such as *Flextronics* and *Sanmina-SCI* joined forces with other major foreign investors and business associations such as the *American Chamber of Commerce* and the *German-Hungarian Chamber of Commerce* to lobby the *European Commission* and the Hungarian government to preserve their privileged status (EE Times 2002; Drahokupil 2008). *Flextronics* also announced that it might leave the country if no favourable decision was taken (Figyelő 2002 as cited in Bohle and Husz 2005). With their combined efforts the different actors were able to influence the final outcome of the accession negotiations in late 2002. As a result, more than three quarters of the TNCs concerned could preserve their tax exemption status (Bohle and Husz 2005).

10 See Philips and Henderson (2009) for a similar argument for Malaysian electronics.

11 However, the pay back of public funds for failed success did not always occur as underlined by Hürtgen et al. (2009) who highlight some cases for Poland

Hungary emerged as an ICT export manufacturing platform in the second half of the 1990s, in particular due to its major role in the manufacturing of computer and related equipment (OECD 2008). Over the last years this segment lost importance, whereas the production of communication equipment increased significantly. The production value reflects this shift, as the value of computer and related equipment production was € 2.56 billion, while communications equipment manufacturing was worth € 11.41 billion in 2007 (ITD 2009). Part of this shift can be explained by the discontinuation of important plants, such as the relocation of *IBM's* hard disk drive plant and the rise of investment in the communications segment, for example, *Nokia's* decision to shift important manufacturing operations for the European region to Hungary.

Although the dependency on the EU-15¹² market has decreased over the years most of the Hungarian ICT exports continue to be destined to Western European countries such as Germany, UK and France (UN Comtrade 2010). Hungary's specific role as a regional supplier for the European market – comparable to Mexico's role for the US – is revealed when looking at trade data. As noted above, there has been a partial upgrading within the operations of the Hungarian ICT sector. Therefore, it would be too simple to apply the extended workbench metaphor for the sector. However, the commonly held belief that ICT equals high-tech industry is also misleading as various indicators suggest that Hungary more closely resembles Mexico than countries with more mature, sophisticated profiles in global ICT such as Finland or Ireland. For instance, the rather low value added/employment ratio of Hungary suggests that low-cost labour is a key driver in explaining Hungary's good export performance (OECD 2008: 49). Further, Hungary had the second largest trade deficit in electronic components (only Mexico has a higher deficit), while it ran a trade surplus in most categories of assembled ICT products (*ibid.*: 81f). This reflects Hungary's role in assembly activities and suggests that high-tech exports are based on high-tech imports to a significant extent. (OECD 2008; UN Comtrade 2010)

After almost two decades of substantial FDI in Hungary, the results, in terms of economic development, could at best be called mixed (Plank and Staritz 2010a). While Hungary succeeded

in attracting substantial investments by major TNCs, the export-oriented electronics sector has remained very much an enclave economy. Despite its prominent role in Hungary, the ICT industry continues to be only superficially embedded in the national economy as reflected in the very limited linkages or spillover effects that are continuously threatened by relocation of the production sites. Certainly, the ICT industry is not as mobile as the clothing industry, but the changes in the industrial organisation, as reflected in the rise of EMS companies and their standardised work processes, have revealed parallels. Against the background of the increased industry mobility and the simultaneous lack of deeper integration with the Hungarian economy, the ICT sector is increasingly exposed to relocations. The potential threat of relocation influences the conditions of workers in the sector significantly, even if in many cases it is a rhetorical tactic to play off workers and communities in different regions against each other.

3.5 Working conditions in the ICT industry

In 2008, the Hungarian ICT industry employed around 63,000 persons, including blue- and white-collar workers, implying a slight, but constant decrease since its peak in 2001 (Eurostat 2010). The majority of workers in the ICT sector are women, accounting for around 60 percent of the labour force (Interview Tarsoly 2009; Acsády 2008). Compared to the workforce in other countries, the age range in Hungary is more diverse and the share of young people does not seem to be as high as one would assume from other empirical research (for an overview see Hürtgen et al. 2009). Further, it seems to be standardised 'human resource' practice to require a minimum education level, even for unskilled or semi-skilled blue-collar jobs, for instance, for so-called line operators. At least in foreign TNCs, these line operators are generally required to have completed eight years of school. While the share of white-collar workers has increased over the years, the production carried out in Hungary is still labour-intensive and involves repetitive activities. Hence, the blue-collar workers still constitute the vast majority of the workers in the sector (Plank and Staritz 2010b).

Until recently, issues related to migrant workers influenced the sector. In early 2005, for instance, some 30,000 migrant workers who were mostly ethnic Hungarians were commuting from the depressed regions of Slovakia to Hungary. Partly, they worked for TNCs in the ICT sector located in the north-western area of Hungary. Since they

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12 The term EU-15 comprises all countries that were already EU members before the so-called eastward enlargement in 2004 and 2007, i.e. Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

were employed via a network of Slovak and Hungarian employment agencies, the TNCs had to pay them only the lower Slovak minimum wage (Bohle and Greskovits 2006; Interview Tarsoly 2009).

In the highly competitive ICT sector the pressure to lower costs is translated from the top down along the production chain to workers at the bottom, leading to widespread labour rights violations (see Chapter 2). In Hungary, key issues in this respect relate to wages, working time and trade union rights, as well as problems arising from frequent use of flexible employment relationships. In particular, the extensive use of different forms of flexible labour plays a key role in stabilising the volatile industry and helps TNCs to deal with flexibility requirements and latent overcapacities.

3.5.1 Wages

Low wages are a key issue for workers in the sector and this confirms the picture that emerges from other country studies for this industry (see Chapter 2). In particular, line operators receive a meagre income. Survey data from the *International Labour Organisation* (ILO) suggests that average wages of line operators in Hungary were approximately HUF 100,000 (€ 399)¹³ in 2007 (ILO 2010). Case study evidence from Hungarian ICT plants suggests that line operators' net wages are occasionally just slightly above the national minimum wage (HUF 69,000 in 2008), ranging from HUF 70,000 (€ 280) to HUF 120,000 (€ 480)¹⁴ (Acsády 2008). Besides the so-called fixed basic wage, workers get a flexible share that depends among other things on the shifts they work in (for example night shifts are awarded with a premium) and on the quantity they produce as a team. Non-monetary compensation includes, among other things, meal vouchers in cafeterias or tickets for transportation.

3.5.2 Working hours and flexibility

Given the industry's imperative to operate 24 hours per day to optimise investments, shift work is common. The arrangements at the company level seem to vary, ranging from eight-hour to twelve-hour shifts on three consecutive days with a day off (Interview Tarsoly 2009; Hürtgen et al. 2009). Commuters encounter problems when bus schedules are not well coordinated, in particular, if women need to ensure childcare. Furthermore, workers reported that the scheduling of holidays is also problematic since it is often the compa-

ny's requirements that determine when holidays are to be taken (Acsády 2008). The Hungarian legislation has a provision that is very telling in this regard: It states that up to 75 percent of total holidays can be taken in accordance with the business' needs if the workers agree (Hürtgen et al. 2009: 244). Considering the weak bargaining power of workers, in particular line operators, their choices are likely to be limited.

3.5.3 Temporary agency work

A further key issue in the sector is the proportion of Temporary Agency Workers (TAWs) employed via temporary employment agencies. Exact figures are not available, but trade union estimates range around 10,000 TAWs for the ICT sector, out of a total of roughly 70,000 in 2006 (VASAS 2007; Eurostat 2009). Interestingly, in 2006 only three TNCs – *Flextronics*, *Nokia* and *Elcoteq* – accounted for 70 percent, or about 7,000 TAWs (VASAS 2007).

Organising workers hired via labour agencies is problematic, as they are not covered by the collective agreements at their actual workplace, nor do the agencies engage in collective bargaining. Moreover, trade unions have only limited access to contracts between the user company and temporary employment agencies. In negotiations, TNCs often blackmail trade unions with the threat to increase the share of TAWs at the expense of permanent workers (Interview Tarsoly 2009). Trade unions in Hungary have focused their efforts in this area on the legislative level. In 2006, an amendment was made to the Labour Code in order to improve the protection of TAWs. For instance, after six months employment TAWs are now to receive the same wages and benefits as permanent workers directly hired by the company (ibid.). Despite some achievements in the legal arena, however, TAWs continue to be discriminated against. In addition to legal discriminations, trade unions report that user companies often ignore existing legal provisions. Occasionally, TAWs are employed for years at the same workplace, which contradicts the intention of the law, namely to mitigate the temporary shortage of workers (VASAS 2007).

3.5.4 Trade Unions

The level of organised workers appears to be quite high in comparison to the level of organised workers in the ICT sector worldwide: Estimates of unionisation range between 20 and 25 percent (Hürtgen et al. 2009). As in other CEE countries, in Hungary the legacy of the socialist system and the role of trade unions therein continue to handicap organising efforts. In addition, the strength of trade unions was further diminished as large parts of the former state companies were privatised or

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13 Based on an average exchange rate of 0,00399 EUR/HUF for June 2007.

14 Based on an average exchange rate of 0,004 EUR/HUF for June 2008.

Box 6: Wages and relocation pressure in a Hungarian ICT plant

The plant that is the focus of this box is one of several locations in Hungary and produces predominantly for the consumer electronics segment. The information is based on an interview with a trade unionist in 2009, who wishes to stay anonymous. The company is benchmarked against other European locations, and hence, has to compete with these plants for final client orders. Employment levels at the plant vary according to orders. While in 2008 the number of white- and blue-collar workers employed at the plant exceeded 2,000, this number had decreased to a total of 1,405 in mid-2009. Due to the economic crisis and the decline in orders from two of their biggest buyers in 2008, leased agency workers and those with short-term contracts were dismissed in a first step. In 2009, another 130 to 140 employees lost their jobs. As regards the gender composition of the workforce, the majority of female employees are working as line operators, particularly in positions where electronic parts are installed manually into products, while men are predominantly occupying logistical positions. The plant is among the most important employers in the county, a region with limited employment opportunities. Hence, people commute from within 35 to 40 km and rarely leave their job at the factory of their own accord. In some cases, the economic fate of three generations of a single family is linked to the plant. Managers of the plant are well aware of the difficult employment situation, giving them the opportunity to keep down wages while employees have to accept these conditions. In comparison with companies of similar profile located in other parts of Hungary, wages at this plant are much lower.

A plant level trade union was established in 2002 and represents roughly 15 percent of the total workforce. The management accepted the trade union from the beginning, yet made it difficult for it to start working by delaying the provision of necessary infrastructure like office facilities and computer. The main challenge trade unionists are facing, however, is handling the threat of relocation and employees' anxiety of losing their jobs. Given these unequal initial conditions, the record of trade union activities is mixed. In some instances, interventions from trade unions have impacted on management decisions, for example, the decision to replace a private contractor providing bus services for commuting workers. There are also regular negotiations with the management regarding the collective agreement covering, among other things, the modalities of interest representation in wage negotiations, the regulations regarding working time (e.g. breaks, bonuses for afternoon and night shifts) and (collective) layoffs. However, the influence of trade union is limited, as the management – not only at this particular plant – is well aware of having the upper hand and uses the relocation threat in (wage) negotiations. The workforce, fearing the loss of their jobs if they place far-reaching demands, is therefore rather disciplined, and the bargaining position of the trade union remains weak. This is reflected in the wage level. For instance, a line operator at the entry position has to work at least in three shifts a month (morning and afternoon shifts for one week each, plus two weeks of night shifts) to take home HUF 72,000 (roughly € 263). The economic crisis provided the management with additional arguments not to raise wages. Instead they negotiated with the trade union to increase non-monetary payments, including meal, travel and internet coupons. Later, the management unilaterally decided to decrease the value of those non-monetary payments, which was possible because they were not regulated in the collective agreement. Moreover, a new working time frame has been introduced in 2008 to accommodate flexibility requirements. Workers now have a fixed amount of working days calculated over a three-month period. In practice, this means that employees work from Monday to Friday, and are informed by the management on Thursday if they have to work weekend shifts. This certainly increases the flexibility for organising production, but it makes planning for employees difficult. In addition, the already rare overtime payments became practically nonexistent, as the management can usually ensure that employees will get as many days off as they are entitled to according to the working time frame. In sum, employees earn on average less than the year before, and wages have even decreased in real terms. More generally, the company's initial wage advantage disappeared over the years: In the past, the minimum wage at the plant was 15 percent above the national minimum wage. Now, the difference is only five percent.

went bankrupt, leading to significant labour shedding and plummeting membership numbers. It is important to note in this context that TNCs are generally not prone to transfer their Western European industrial relations practices to the CEE countries (Meardi 2007). In the Hungarian case, the majority of TNCs are content with lower Hungarian standards and even German-based TNCs *'do not wish to replicate the strong regulatory force of German collective bargaining and co-determination via works councils'* (Neumann 2009).

Nevertheless, the biggest trade union in the sector, the *Hungarian Metalworkers' Federation* (VASAS), was successfully able to organise several plants, including *Nokia, Sanyo, Philips* and *Flextronics*. Still, many of the major players in the Hungarian electronics sector are hostile towards trade unions – it continues to be a difficult task to organise in these plants (IMF 2009; Interview Tarsoly 2009). Also, the majority of EMS companies including *Foxconn, Jabil* and *Sanmina-SCI*, do not have trade unions in their plants and only few notable exceptions do have functioning workers' councils and trade unions at their Hungarian sites (see Box 6).

3.6 Conclusion

Hungary has transformed into the major producing and exporting ICT manufacturing country in CEE over the last 15 years. Motivated by low wages and skilled labour in geographic proximity to end markets in Western Europe, as well as vari-

ous government incentives, including tax allowances and IFTZs, major TNCs have established production capacities in Hungary. The socio-economic impact of these investments remains ambiguous. On the one hand, these investments have driven the modernisation of the industry and contributed to economic growth and job creation. Also, the role of Hungarian locations in global production networks of electronics has been partially upgraded, and they cannot be considered merely extended workbenches anymore. On the other hand, the export-oriented ICT sector has, despite some government efforts, remained very much an enclave economy. Hence, the industry lacks a deeper integration with the national and local economy as reflected in the very limited linkages or spillover effects, which, in turn, increases the risk of relocation of these 'factories on wheels' (Plank and Staritz 2010a).

Certainly, the ICT industry is not as mobile as the clothing industry, but changes in the industrial organisation, as reflected in the rise of EMS companies and their standardised work processes, have revealed parallels. Against the background of the increased industry mobility and the simultaneous superficial embeddedness, the ICT sector is increasingly exposed to relocations. These relocation threats, whether real or rhetorical, translate into workers lives and are reflected in their working conditions. Key labour rights issues in Hungary include low wage levels, high working time, flexible employment relationships, the use of temporary employment agencies and hostility of managements towards trade unions.

Romania is a newcomer country in the global electronics sector. Its current position in the international division of labour is primarily based on its relatively low labour costs compared to established producer countries in the region. This chapter traces the development of the Romanian electronics industry from the time of state socialism to the current situation. A special focus will, again, be on the question how strategies of Transnational Corporations (TNCs) affect the conditions of workers. In addition to a general overview, it will provide a case study on the Romanian plant of the Canadian Contract Manufacturer (CM) *Celestica*.

4.1 From the birth of the electronics industry to the collapse of state socialism

During the cold war, Romania aimed to develop its own national ICT industry. However, it did so largely outside the COMECON framework (see footnote 5) and in close cooperation with France and the US. In particular, the French *Plan Calcul*, elaborated under de Gaulle to develop a French computer industry independent of the US, provided the geopolitical background for the development of the industry (Plank and Staritz 2010b). Moreover, Ceaceşcu's own agenda vis-à-vis Moscow put Romania into a specific position as he did not want to develop Romania's comparative advantage in agriculture. The launch of the industry in Romania was marked by the foundation of the *Industrial Central for Electronics and Automation* in 1970 in Bucharest (Computerwoche 1978). Romania could rely on French technology to develop FELIX – its first mini-computer (Baltac 2006). Subsequently, the US firm *Control Data* entered a joint venture with Romania to start production of disk drives and printers in 1973, which was also intended to serve as an export-platform to countries such as China (Plank and Staritz 2010b). The sector produced a wide range of electronics goods, including computers and peripherals, for domestic consumption as well as for export to COMECON countries, the Middle East and Asia (Grundey and Heeks 2004). Much

of the industry was concentrated in Bucharest at the industrial platform *Pipera*, but facilities were also located around Timișoara and Cluj (Plank and Staritz 2010b).

While Ceaceşcu's agenda of 'dissidence' with the former Soviet Union and the orientation towards the West had facilitated some developments during the 1970s, the turn to autarky in the 1980s and the related overall change clearly had a negative impact on technological development of the industry (Plank and Staritz 2010b). Hence, as the Romanian economy entered a period of isolation in the beginning of the 1980s, technologies became obsolete. And in spite of some achievements, by the end of the 1980s the technology gap to international standards widened significantly (Cargea et al. 2004).

The collapse of state socialism in the region made these weaknesses apparent, as companies were faced with competition from foreign firms. This was further exacerbated by the loss of traditional COMECON export markets and state funds that had until then fuelled domestic demand (ITC 2002). Only few Romanian firms survived the downturn of the economy during post-socialist transformation. *Electromagnetica* was one example that could continue operating by changing its profile and later entering joint-ventures with TNCs, including *Siemens* and *Goldstar* (ITC 2002). Generally, most production capabilities disappeared in the 1990s. For instance, the production of components, which encompassed a variety of active and passive components, vanished almost entirely (Pascu 2004).

4.2 The electronics industry after 1989

During the 1990s, TNCs investments in electronics were limited, as the general political and economic environment in Romania did not appeal to foreign investors. The early entry of telecommunications firms proved to be the exception to this rule. In particular, the emerging opportunities in the relatively large domestic market were attractive to TNCs such as *Siemens*, *Alcatel*, *Nortel* and *Goldstar*, which quickly entered joint ventures in 1990

and 1991 (Plank and Staritz 2010b). In 1993 the Greek telecom firm *Intrarom* also established production in Romania to supply the national telephone operator *Romtelecom* and the *National Lottery* with terminals (Intrarom website 2009). Two others were the investments of the German car electronics manufacturer *Lisa Dräxlmaier* (1993) and *Solectron* (1998). While the early investments of telecom TNCs were primarily market-driven, *Lisa Dräxlmaier* was mainly motivated by low labour costs. Its four plants assembled parts imported from Germany to then re-export the final products (Pascu 2004). Low cost labour was also a key motive for *Solectron*, then US-owned, to invest the US\$ 100 million in Timișoara. It was the first investment of an important Electronic Manufacturing Services (EMS) company in Romania and the plant's role was to assemble mobile phones and hardware equipment for the export to Western Europe.

Local computer production consisted mostly of smaller Romanian firms that assembled cheap products from Asian inputs for the Romanian market – a pattern that could also be encountered in other Central and Eastern European (CEE) countries, in particular during the second half of the 1990s. Some of them also started to develop their own brands for domestic as well as for specific export markets in South Eastern Europe.¹⁵ However, the majority of the market was served by imports of brand products from TNCs such as *HP* and *Canon* that relied on local sales offices and system integrators (Pascu 2004).

After the burst of the New Economy bubble and the global restructuring of the sector, Romania started to emerge on the global electronics landscape together with other newcomer countries such as the Ukraine. Labour cost differentials are certainly an important factor in explaining this development as Romanian unit labour costs in ICT manufacturing were eight times lower than the EU-25¹⁶ average in 2006 (ICT Industries Romania 2007). But other factors are also important in TNCs location decisions. Key motives are highlighted by an industry expert: '*Operating in Romania is considered by many CEM [Contract Electronics Manufacturing] executives as being equivalent to operating in China in terms of the total landed costs. Further proximity to Western European markets and shorter supply chains had made Romania an irresistible location for CEM players.*' (Frost & Sullivan 2008)

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 15 For example Flamingo Computers, see: www.flamingocomputers.com [Accessed February 8, 2010].

16 The term EU-25 comprises all current EU member states but not Rumania and Bulgaria who were the last to join in January 2007.

4.3 The ICT industry today – new competitor in Europe?

Compared to established production locations in Hungary or the Czech Republic, the ICT industry in Romania is still in its making. The Romanian share of ICT manufacturing output in total manufacturing was 2.9 percent and it accounted for 1.9 percent of total manufacturing employment in 2008 (Eurostat 2010). Since 2007, the sector has increased rapidly, as indicated by its export performance: ICT exports increased by 125 percent compared to the previous year and are projected to rise against the general trend by another 30 percent in 2009. The share of ICT exports in total Romanian exports also doubled in 2008 (Vuici 2009). The vast majority of these exports are destined for the EU-15 (see footnote 12) with Hungary's rise as a more prominent export destination in recent years (UN Comtrade 2010). A key driver behind these developments and the most prominent indication of Romania's increasing importance in ICT is *Nokia*. To a certain extent, the company's activities can explain the industry's development over the last two years. On the other side, the economic crisis affected the whole ICT sector (see Box 7). However, the largely unnoticed, yet growing, presence of a variety of EMS companies in Romania must be considered an important factor due to the capacities they added. Among them are key players of the EMS industry, including *Celestica* (2005, Oradea), *Elcoteq* (2006, Arad)¹⁷ and *Plexus* (2009, Oradea), which followed their competitors *Solectron* (1998, Timișoara; now *Flextronics*), *Zollner* (2001, Satu Mare) and *Benchmark Electronics* (2004, Brașov).

The sector's total turnover in 2008 amounted to € 1.703 million, which is an increase of more than 55 percent from the year 2007, pointing to the important role of *Nokia*. Despite the economic crisis, the turnover is estimated to grow by another 25 percent to reach € 2.150 million by the end of 2009. Within the ICT sector communication equipment was the most important sub-segment with a turnover of € 870 million (51 percent of total), followed by electronic components and boards with € 431 million (25 percent of total), computers and peripheral equipment (21 percent of total) with € 346 million and consumer electronics (four percent) with € 56 million (Vuici 2009).

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 17 The plant was closed in 2009 (see Box 1) but according to a recent interview with Elcoteq's Chief Executive Officer the company is 'ready to start something in Romania again' (Evertiq 2010e).

Box 7: Building Nokia-Village in Jucu – a success story?

While the increasing presence of EMS companies has passed largely unnoticed, the decision of the Finnish mobile phone company *Nokia* to set up a plant in the small village Jucu, close to Cluj, highlighted the trend to shift labour-intensive operations in ICT eastwards. The media took a strong interest, since *Nokia* justified the relocation of the German plant in Bochum to Jucu by claiming that the costs of the German plant had been too high and that the move was part of a necessary adjustment process – despite the fact that *Nokia's* market share was close to 40 percent and it had recorded historically high profits in the previous year (Plank et al. 2009). While *Nokia* settled a deal in mid-2008 to repay € 40 million (of initially requested € 60 million) in subsidies to the government of the German state North Rhine-Westphalia, *Nokia* once again receives favourable conditions in Romania: The company uses the land for free and is absolved from tax payment on land and building for a period of 30 years (Die Presse 2008; Evertiq 2008b). According to the district administrator of Cluj, the national and local government had invested around € 30 million to develop the Industrial Park (Löttsch and Caramidariu 2008). In return, the (local) authorities expected the creation of 15,000 to 20,000 jobs in *Nokia-Village*, including indirect job creation via suppliers (Meyer-Feist 2008a). But in the days of the economic crisis, suppliers of *Nokia*, for example, the Chinese company *BYD* and the Finnish *Hansaprint*, cancelled their plans to invest in Jucu (Padurean and Alexe 2009). 'To some extent, we are producing as if we would be located on an island', explained the plant manager (Roser 2009). Also, it appeared that *Nokia* could not create the announced 3,500 jobs, since by 2009 only 1,400 people were working in the production hall. A lot of them were former clothing and textile workers that were now assembling mobile phones from imported components. Additionally, some hundred Temporary Agency Workers (TAWs) were working there depending on the order situation (Lauer 2009). However, in June 2010 media reports stated that *Nokia* employed around 4,000 workers and that its plant was now running at full capacity (Evertiq 2010b).

Nokia is profiting from the weak job market in the region. While the city of Cluj has one of the lowest unemployment rates, the majority of workers are from the poorer villages around Cluj, Dej or Gherla. Some of the workers are commuting up to 120 kilometres to work in the plant in Jucu. About 70 percent of the total are women (Stanescu and Seviianu 2009). According to media reports and trade unionists, *Nokia* wanted to expand the working time to 60-70 hours per week just after the launch of production in 2008. As the Romanian law allows for a maximum of 48 hours, *Nokia*, together with other (foreign) employers, lobbied for a flexibilisation of Romanian labour law to adapt to its volatile, fluctuating orders (Meyer-Feist 2008b). At the end this was not successful, but in 2009 the company introduced a two-shift system and extended the shifts from eight to twelve hours (Lauer 2009). Workers are strictly controlled by security companies and get paid around € 250 to 300 per month (Roser 2009; Stanescu and Seviianu 2009). This is more than in the clothing industry but below the average Romanian net income of around € 312.¹⁸ In contrast to most TNCs in the ICT sector, *Nokia* has a local trade union in its Jucu plant that is affiliated with the largest Romanian confederation *CNSLR Frăția*. However, a second trade union, affiliated with the second largest trade confederation – *Cartel Alfa* – had to go to court to receive the right to represent the workers (Roser 2009; Lauer 2009). It seems that the second trade union places greater demands for improved working conditions. For example, it repeatedly criticised the twelve-hour shift where many workers have to stand on the lines – only interrupted by three breaks totalling one hour (Lauer 2009). Hence, the management refused to accept this second trade union as a partner in collective bargaining.

For *Nokia* these conditions have worked out so far: Within less than two years, the company's turnover in Romania increased from € 6.6 million in 2007 to around € 500 million in 2008, which accounts for about one percent of *Nokia's* global turnover per year (Seceleanu 2009). Romania's desire to profit from the investment by upgrading its domestic economy has not been fulfilled thus far. Since the start of production, there may have been a technical upgrading through the increased complexity of the phones assembled, but the plant still focuses exclusively on assembly operations. Most components are imported, in particular from China, Hungary and Mexico.

The industry is highly concentrated and dominated by foreign TNCs (see Table 2). The Top Five firms in the sector – *Nokia*, *Alcatel-Lucent*, *Celestica*, *Intrarom* and *Flextronics* – accounted for roughly 60 percent of the sector’s turnover in 2008 (Vuici 2009). In addition to the large Original Brand Manufacturers (OBMs) and the EMS companies, a number of smaller foreign players – mostly mid-tier EMS firms – have invested in Romania, including *Connectronics* (2004, Oradea), *Systronics* (2006, Arad) and *GDM* (2006, Curtea de Argeş, in 2008 moved to Băiculeşti). *Hanil Electronics* (2007, Oradea) is a key supplier to *Samsung*, producing LCD products. It is among the first Asian investments in the Romanian ICT sector. Domestic firms are generally not of great importance in the sector. They only play a role in the production of computers and peripheral equipment for the domestic market as reflected in the prominent position that domestic PC assemblers such as *K Tech* or *Flamingo* play in this regard. These firms are predominantly oriented towards the domestic market and have gained considerable experience since they started their assembly business in the mid-1990s. Their pricing policies are geared towards the budgets of average Romanians and, hence, products are significantly cheaper than international brand products (AUR 2009). While many of the foreign, export-oriented firms in the sector grew despite the economic crisis, these domestic firms suffered considerably. For instance, *K Tech* lost 55 percent in sales during the first half of 2009, while *Flamingo* fared only slightly better with 50 percent sales drop (Vuici 2009).

The role of ICT firms operating in Romania in the constantly evolving international division of labour can be roughly conceived of in two ways: Firstly, Romanian firms can be seen as occupying a subordinated role vis-à-vis plants located in countries with an established, more mature ICT sector. For instance, *Elcoteq’s* plant in the border town of Arad previously produced inputs that were subsequently shipped to and assembled in its Hungarian plants (EMSnow 2008). In another way, the Romanian plants can be understood as competing directly at eye level with other plants in Europe. The closure of *Artesyn’s* plant in Tatabánya in Hungary and the subsequent transfer of the production to *Celestica’s* plant in Oradea could be taken as an example in this regard (Evertiq 2005a; see also Chapter 4.5).

To analyse Romania’s role in global ICT industry one must look beyond the argument of low labour

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 18 According to the Romania-Economic Newsletter, the net average salary in Romania stood at RON 1358 in February 2009 or € 312 (Embassy of Romania in Nicosia 2009), based on an average exchange rate of 0,232 EUR/RON for February 2009.

costs. The sector shows a high level of geographical concentration. The western and north-western regions of Romania are the most important, in particular around the cities of Timișoara, Arad, Oradea and Cluj. These cities do have a certain tradition in the ICT industry, including universities that turn out engineers for the industry, but, equally important, they are all close to the Hungarian border. Hence, the developed infrastructure (such as road networks) and established production capacities in Hungary are at least as important in explaining the dominance of these regions. For instance, one major EMS firm has explored the possibility of relocating internally (to exploit wage differentials), but discarded the idea due to the lack of reliable infrastructure required for just-in-time production (Plank et al. 2009).

A third important factor, besides low labour costs and geographic proximity to key markets and established infrastructure, is public policy. The liberal investment policies that range from a favourable tax regime to the establishment of special Industrial Parks (see footnote 4) are worth mentioning (Aris 2007 & 2008; Gheorghe 2009). In addition, the sector has received special attention through different government initiatives since the late 1990s (ITC 2002). As in other CEE countries, local governments were instrumental in steering these developments by providing tax exemptions or subsidised infrastructure (Radosevic 2004b). In the case of *Nokia*, which relocated its plant from Germany to Romania in 2008, the county of Cluj offered the land for free. *Nokia* was granted tax exemptions on the land and its buildings for 30 years and obtained the modernisation and extension of the airport in Cluj (see Box 7). Other cases were less controversial such as the investment of *Celestica* (see Chapter 4.5): In a competitive bid the mayor of the town of Bors accepted the price of five Euros per square metre for ‘pragmatic’ reasons: ‘*The money we lost in the negotiations will come back to us in [property] taxes every year.*’ (Rif and Simai 2005)

The state support for such large investment projects is usually justified by the positive contributions to employment creation as well as industrial upgrading and spillover effects for the regional economy and domestic firms. Certainly, these investments create a number of jobs, but the quality of these jobs, as well as their long-term sustainability, remains questionable. With regard to positive upgrading and spillover effects, an assessment of a significant share of the Romanian ICT sector suggests that the long-term prospects for domestic firms as suppliers are rather gloomy (Plank and Staritz 2010a). The case of *Nokia* underlines this issue, which is also confirmed by other studies in the region

Table 2: Major ICT Investments in Romania (1998-2009)

Name	Country of Origin	Location	Year of Opening	Production	Number of Employees (2008)	Trade union in the company
Benchmark Electronics (CM)	US	Braşov	2004	PCBA, box-built	300	No trade union
Celestica (CM)	Canada	Oradea	2005	PCBA, PC motherboards, displays, Internet servers and full products assembling (e.g. TV monitors)	1,100	No trade union
Connectronics (Part of Connect Systems) (CM)	Belgium	Oradea	2004	PCBA and cables	680	Blocul Naţional Sindical (BNS)
Elcoteq ¹⁹ (CM)	Finland/ Luxembourg	Arad	2006	electronic tubes, electronic components for communication technology	400	No trade union
Flextronics ²⁰ (CM)	US	Timişoara	1998	PCBA and electronic boards for different high-tech equipment	3,100	Blocul Naţional Sindical (BNS)
Hanil Electronics	Korea	Oradea, Palota	2007, 2008	LCD monitors	500	No information about a trade union available
GDM (CM)	Belgium	Curtea de Argeş, in 2008 move to Baiculesti	2006	PC-Boards, complete system solutions, turnkey GDM projects	300	No information about a trade union available
Nokia	Finland	Jucu/Cluj	2008	Mobile phone assembly	1,600	CNSLR Frăţia, Cartel Alfa
Plexus (CM)	UK	Oradea	2009	PCBA	No information available	No information about a trade union available
Systronics (Part of Cicor Technologies Group) (CM)	Switzerland	Arad	2000	THT and SMT assembling, soldering, testing, system integration, cable assembling, system testing	240	No information about a trade union available
Zollner (CM)	Germany	Satu Mare (2 plants)	2001, 2007	THT and SMT assembling, inductive components	510	No information about a trade union available

Source: AUR 2009, Vuici 2009, own research on company websites

¹⁹ The *Elcoteq* facility in Arad was closed in the context of *Elcoteq's* global restructuring plans (see Box 1).

²⁰ Initial investment made by *Solectron* which has been taken over by *Flextronics* during the acquisition of *Solectron* in 2007.

(Hürtgen et al. 2009). It might be too early to make a final judgement in this regard, as ICT investments in Romania are relatively recent. The chapter on Hungary has shown that such benefits do not materialise automatically. Only as suppliers of non-core products and services are domestic firms of higher significance. For example, smaller Romanian companies succeeded as competitive haulers through very low wages and high flexibility (Hürtgen et al. 2009: 161). But even if industrial upgrading were to occur, it is far from certain that it would be beneficial for workers *'since the upgrading of skills and the increased learning requirements inside and outside the factories often do not translate into higher wages, better benefits and increased employment security'* (Lüthje 2005: 30).

4.4 Working conditions in ICT manufacturing²¹

In 2008, the ICT manufacturing industry in Romania employed around 27,180 people (Eurostat 2010). A majority of 60 percent of these workers are women – reflecting the high proportion of female workers in the ICT industry worldwide. While female workers on the lines may even make up 70 percent of the total, very few women are occupied in technical and top management. Amongst the white-collar workers women primarily occupy positions in design departments, accountancy, quality control sections and human resources, but still represent less than 30 percent in these areas (AUR 2009). In contrast to other sectors in Romania and also in contrast to the global ICT industry, migrant workers do not play an important role in the Romanian ICT industry. The only known example is of the *Nokia* supplier, *BYD Romania*, which intended to staff its operations close to the *Nokia* plant in Cluj with Chinese migrant workers (Plank et al. 2009: 45). Whether the Roma ethnic minority plays a special role in the Romanian electronic industry has not been investigated to date: While Roma work, for example, in the *Celestica* plants, there is no indication for them being either over- or under-represented.

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 21 This section is primarily based on interviews and on a background report, which the Romanian organization AUR (*National Association of Human Resources Specialists*) produced for WEED. Besides information from secondary sources, AUR conducted worker interviews in seven ICT companies: *Celestica*, *Benchmark Electronics* and *Elcoteq Romania SRL* as well as in four smaller Romanian companies that distribute PCs but also do assembly work. Further, AUR interviewed academics and trade unionists to complement and deepen the information on working conditions in the electronics sector.

Most of the ICT industry in Romania consists of Greenfield Investment and the majority of the workforce, in particular workers on the lines, are recruited from their often-poor surroundings. The high proportion of these un- and semi-skilled workers highlights the fact that in Romania, as in the ICT sector worldwide, the majority of work is labour-intensive and low-skilled. The minimum qualification required by the TNCs is that the workers have completed eight years of schooling. According to prior research, until a few years ago, the management's requirement was still twelve years of schooling (Hürtgen et al. 2009: 246f) To prepare them for the work in the factories they get one to two weeks of training. Once working on the production line, they have little opportunities to qualify and climb up the job ladder, a fact that is a source of frustration particularly for young people (AUR 2009).

The working environment in major TNC factories is clean and safe in order to meet minimum standards required by the production. For instance, the temperature must not be above 28 degrees Celsius (Plank et al. 2009). Most difficult for workers is the lack of natural light and windows. Furthermore, the work process itself is monotonous and tiring (AUR 2009).

The surveillance of the workers is very strict. Some companies even employ video cameras to monitor the activities and movements of the employees. In the case of *Benchmark Electronics*, the workers movements in the company are strictly monitored to the effect that workers cannot move freely from one section to another. Also, as in most companies, a security agency controls the unit's entrance and exit (AUR 2009): *'They controlled us at access and exit. When they found even a little screw in somebody's possession, that person was immediately fired ... denounced to the police ... and the case published on the panel. Metal detectors were installed at entrances and exits and a private firm ensured security'*, one employee reported (Interview worker 2008). The security controls that are put in place to prevent workers from stealing have to be put in perspective and understood as a consequence of the low wages in the industry (Hürtgen et al. 2009: 240).

4.4.1 Wages

One of the main motivations for TNCs to establish production sites in Romania, besides its proximity to markets, is that the wages are amongst the lowest in the whole of Europe (Larive Romania 2005: 41). With monthly € 141 in 2008 and € 153 in 2009 the national gross minimum wage is the second lowest of the 27 EU Member States (Czech 2009), and trade unions have repeatedly criticised that this amount does not cover living costs.

In the Romanian ICT industry the wages in the major plants are composed of a fixed basic wage and a high variable share. The base gross wage ranged in 2008 between RON 700 and 800 (€ 191 to 218)²² for line operators at entry positions and the average variable share ranged between 20 and 40 percent. In contrast to operators, engineers were paid with fix salaries between RON 2,500 and 8,400 (€ 682 to 2,294), additionally receiving bonuses for productivity and loyalty (AUR 2009). The flexible share for the line operators is based on individual or line performance and discipline: Workers receive cuts for absenteeism and bonuses for (night) shifts (Plank et al. 2009). In some companies workers also receive the 13th salary and meal tickets are given to the employees. Furthermore, some factories do organise and pay for the transport to the plants (AUR 2009). Nevertheless, the paid wages in the sector often continue to be below the average wage in the region (Plank et al. 2009: 44). The wages are one of the main sources of discontentment for the blue-collar workers in the Romanian ICT industry. Operators at Greenfield Investments are simultaneously dependent on subsistence agriculture to compensate for the low wages in the sector (AUR 2009). The case of the Romanian ICT industry demonstrates a global characteristic of the industry: The wages paid in the sector are an improvement of living conditions for specific groups, but are still not sufficient to pay living costs.

The low wages might also be an explanation for the relatively low percentage of migrant workers in the Romanian ICT industry. On the contrary, before the onset of the global financial and economic crisis in 2008, Romania itself had been a major source of migrant work in Europe, especially for white-collar workers, such as engineers of the ICT sector, who left the country searching for better working opportunities (AUR 2009). This has changed with the economic crisis and the resulting instable labour market in European states. However, Romanians are still employed through temporary employment agencies in order to work for example for *Foxconn* in the Czech Republic (see Chapter 5).

4.4.2 Working time, flexibility, temporary agency work

As production volumes change constantly in the global ICT industry, ICT companies adopt a variety of flexible employment strategies all over the world. In Romania the most important strategies are overtime, seasonal and contract labour. Additionally, internal shifting to other production lines and sending workers home when orders are

down occurs. In the latter case, they occasionally have to take leave (Plank et al. 2009).

In general, the working week is between five to six days in three shifts of eight hours with a 30-minute break for eating the meal. Normally, workers have to do overtime whether due to urgent orders or because the workload has not been completed in time. According to law, the supplementary wage for overtime work is at least 75 percent of the basic wage in case it cannot be compensated by free time (Romanian Labour Code, Art. 120[2]). However, according to trade unions, some companies in the ICT hardware production use internal pay rolls in addition to the official ones, which register the overtime and are kept hidden during labour inspections. Furthermore, if operators do not fulfil their daily workload, they are obligated to do overtime, which is not paid accordingly. In the case of *Benchmark Electronics*, workers reported that overtime was paid on a prior calculation and an agreed amount, but not according to legislation (AUR 2009).

Another means to adjust employment levels according to the flexible demands of the ICT industry is to hire seasonal and Temporary Agency Workers (TAWs). The former are mainly students that are contracted through their universities to work in the factories during the semester break in summer. In comparison, TAWs are a lot more important for the ICT industry in Romania, and are more problematic for the overall working conditions in the sector. They are used throughout the year. While the core employees have long-term contracts with the companies, TAWs are provided by temporary employment agencies, mainly *Manpower* and *Adecco* (AUR 2009). In Romania the TAWs account for about 20 to 30 percent of the workforce in the electronics sector (AUR 2009; Plank et al. 2009). This is relatively low compared to the sector's situation on a global level: according to estimates of the *International Metalworkers' Federation* (IMF), about 50 percent of the global labour force employed in the electronics industry consists of TAWs. At peak times this percentage can even rise up to 90 percent (IMF 2007).

TAWs are generally the first who are forced to leave if orders decrease. This rule has been proven once again during the economic crisis in 2008/09. In Romania TAWs were the first to lose their jobs and the agencies had difficulties finding new jobs for them (AUR 2009). In many cases they were fired regardless of contractual stipulations – a practice that violates Romanian labour law. A TAW working on the line said: *'I'm working in the company for three months. I just know my working period shall stop earlier than provided by initial agreement. I have come here to work six months. Nevertheless, I shall be obliged to stop working here.'* (Interview worker 2009)

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 22 Based on an average exchange rate of 0.28 EUR/RON for June 2008.

Box 8: Temporary agency work in Romania

Temporary agency work was introduced in Romania only in 2003 and has been increasingly popular since 2005. The temporary agency work penetration rate of 0.3 percent in 2008 is lower than the rate of the Czech Republic, Hungary, Poland and Slovakia, but the total amount of hours worked by temporary workers are only below the amount of Poland and Hungary (CIETT 2009). Until now, temporary agency work has not been considered as one of the components of social dialogue and collective bargaining at a national level.

The top four temporary employment agencies operating in Romania are the TNCs *Manpower*, *Lugera & Makler*, *Adecco* and *Professional*. The main sectors in which their workers are employed are industrial production, civil engineering, retail, ICT and secretarial services (Chivu 2008).

In about a third of all cases, the duration of employment contracts in 2007 accounted for six to twelve months. Another 30 percent of TAWs were employed for a maximum of six months. TAWs in Romania serve mostly as seasonal input with the highest employment rate during summer and official holidays like Christmas or Easter (CIETT 2009).

The steady growth of temporary agency work in Romania therefore means a rise in precarious work and reflects the ongoing disempowerment of organised labour as a consequence of economic globalisation.

4.4.3 Trade unions

In order to establish a trade union on company level in Romania, only 15 members are required. However, the trade union needs the affiliation of one third of all employees to be recognised by the management. In the ICT industry most of the trade unions on company level are affiliated with the Confederation *Blocul Național Sindical* (BNS) and a few trade unions are affiliated with the Confederation *CARTEL Alfa* (AUR 2009).

In Romania, two obstacles for a successful unionisation coincide that are both typical for CEE and for the ICT sector: On the one hand, the role trade unions played under the Ceaușescu-regime continues to be an obstacle for successful unionisation today, since workers do not really trust them. According to an interviewed trade unionist, trade unions do not enjoy a very good reputation, but this is currently changing due to the economic crisis. People begin to understand the importance of having a trade union in their company and are increasingly willing to create them (Interview trade unionist 2009). On the other hand, trade unions often face opposition from the management. Although trade unions seem to be relatively powerful compared to global standards (see Box 9), management of new Greenfield Investments is often reluctant to workers' organisation and occasionally attempts to prevent it (see Chapter 4.5). The *International Trade Union Conference* (ITUC) reported that anti-union employers in Romania, usually foreign companies, make workers' self-obligation to not create or join a union a condition for their

employment (ITUC 2009). This seems to be confirmed by the ICT industry.

An interviewed trade unionist (Interview trade unionist 2009) reported that *'on the platform where Celestica is located there are also other Information Technology companies. We managed to create a union in one of them, named Connectronics Romania. As for the management's attitude, it never displayed a hostile behaviour towards unions but tries to discourage them under the table. We had situations in which, in the very moment the management was to sign the union's setting-up document, it said the leaders' signatures are forged ... In other situations they discretely isolated the leaders and offered them less and less work tasks to accomplish and other such acts'*.

Another strategy against independent trade unions in the ICT industry seems to be the founding of alternative, management-friendly employees-councils which have been recognised in contrast to other trade unions (Hürtgen et al. 2009: 253f). Along the same line, the fragmented and decentralised structure of trade unions and the competition between them gives the management an upper hand, as it can cherry-pick those trade unions which best fit the management agenda. In March 2005, *BusinessRomania* reported that *Solectron* prohibited employees to organise in unions in its production site in Timișoara (Evertiq 2005b). Trade unions and the new human resources manager confirmed this. However, the company's attitude towards trade unions seems to have improved since the takeover of *Solectron* by *Flextronics*, including the replacement of the general and human resource manager.

Box 9: Trade unions in Romania

The level of unionisation in Romania is still quite high compared to other CEE countries, however, a sharp decline of membership since 1990 can be observed. In 2002 it was estimated that 44 percent of employees were union members, down from around 90 percent at the beginning of the 1990s. More recent estimates suggest that the figure is now between 30 and 35 percent (Fulton 2009). Aurora Trif states that one reason for the decline of membership is the low effectiveness of trade unions. According to a federation official interviewed by her, only around one-third of company union officials really try to protect employees' interests since most officials are paid by the company (Trif 2004: 56).

The Romanian trade union and collective bargaining system is quite complex. There exist more than 20 national confederations, but only five of them meet the representation criteria to negotiate collective agreements on the national level (Trif 2004: 53ff).²³ Each of these national confederations – most of them having close ties with political parties – has a substantial number of affiliated federations, and in general they compete for members in the same sector (Wolf 2007: 45). So far, plans to overcome this fragmentation have not materialised, as reflected in the unrealised merger of three (*CNSLR Frăția*, *Blocul Național Sindical* and *CSN Meridia*) of the five major confederations (Ciutacu 2007; Kohl 2008). Fragmentation is further aggravated as trade unions are – like in many CEE countries – decentralised and company-based. They are free to affiliate with any of the confederations. Collective bargaining at the sectoral level often covers only the minimum terms and conditions of employment, in particular minimum wages. Therefore, company unions have to negotiate the more detailed employment conditions at the firm's level. However, company unions are frequently in a weaker position in terms of their negotiating power, as power asymmetries between employees and employers are greatest at the firm level (Plank et al. 2009: 52).

In its *Annual Survey of Violations of Trade Union Rights*, the *International Trade Union Conference* (ITUC) states that employers try to block the creation of trade unions within companies, warn workers against discussing unionisation with outsiders, try to create enterprise-friendly unions and do not respect the right to collective bargaining (ITUC 2009). Additionally, the power of unions is restricted due to limitations of the right to strike: Organising a legal strike is difficult, as strikes may be held only if all means of possible conciliation have failed, and strikes are illegal if a collective agreement is in force. Moreover, most employees are obliged to provide a minimum service of one-third of normal activity in the event of a strike (ibid.).

There is one official trade union in the plant now, but a second existing one was refused recognition by the management (Plank et al. 2009). A similar situation existed in *Nokia's* plant close to Cluj, where a trade union that seemed to be stronger aligned with management's interest was recognised, but the other union had to enforce its recognition in court (see Box 9).

It can be summarised that the management of ICT companies is reluctant towards the foundation of independent trade unions. Their policy benefits furthermore from fragmentation and competition between the confederations of trade unions. Thus, ICT companies can easily play

the confederations off against each other. Yet it should be recognised that ICT manufacturing in Romania is not a non-organised space.

4.5 Case study on Celestica: Company without workers' representation

Celestica, a Canadian CM (see Box 10) has been selected for an in-depth case study of a company active in the Romanian ICT sector. The company is the world's fourth largest provider for EMS and is a major producer of computer components for Western markets.

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23 In terms of collective bargaining representation, to be representative at the national level law requires trade unions to be representative of at least five percent of the entire labour force, and to be representative at the sectoral level law requires trade unions to be representative of at least seven percent of all employees in the sector (Plank et al. 2009: 52).

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24 Besides one trade unionist, ten workers were interviewed in 2008 and 2009, six workers are female, four male, their age range from 19 to 40 years. With two exceptions they were all working as operators.

In 2008 and in the course of a second round in 2009 the Romanian *National Association of Human Resources Specialists* (AUR) conducted interviews with workers employed by *Celestica*.²⁴ The selection of the Canadian CM was not only due to its production of computer components for the Western market, but also with the aim to receive more information about the failed founding of a trade union in 2008. However, in 2009 it was not possible to gather substantial information on the failed union founding, since those engaged in the process had left the company.

4.5.1 Go east: Romanian facility benefits from relocation to low-cost countries

After an acquisition in the Czech Republic, *Celestica* started in 2005 their second investment in Central Europe, namely Romania, and only ten kilometres away from the Hungarian border, which the company's website praises to be the '*low-cost mega site for the Europe region*' (*Celestica* website 2010a). The Romanian production site benefited from a relocation strategy from high-cost to low-cost locations as part of the company's restructuring in order to achieve lower labour costs (see Box 10). In 2005 the US company *Artesyn* relocated its production from Hungary to *Celestica*'s manufacturing facility in Romanian Oradea (Ziarul Financiar 2005) and in 2009 the Czech *Celestica* facility in Ráječko also relocated some of its production to Oradea (Evertiq 2009g). The company's activities in Romania, according to interviews with workers and trade unionists, consist mainly in assembling PC motherboards, displays, Internet servers and full products e.g. TV monitors for *Samsung* (Interview trade unionist 2009; Interviews workers 2008/2009). The largest part of the assembled products is being exported to European and US markets and only few products are destined for the domestic market (Interview trade unionist 2009). Besides *Samsung*, other clients such as *Philips*, *IBM*, and *Lenovo* were named in the interviews.

The added value in Romania is very low, because the majority of inputs for motherboard assembling comes from Asian countries, in particular China (Interviews workers 2008/2009). Romanian companies are hardly involved as suppliers in *Celestica*'s supply chain. The only Romanian providers involved offer writing materials and paper or print promotional materials (Interview trade unionist 2009). This means that the local industry is not substantially integrated into the company's supply chain.

Celestica in Romania was only briefly affected by the economic crisis. It seems that the facility still benefits from the relocation and the job loss

lasted only for a short period of time (see below). The impression that *Celestica* in fact did not suffer from the crisis in the medium term was validated by the fact that the management never took advantage of an 'Anti Crisis Measure Plan', negotiated on a national level between the government, trade unions and employer's associations. Against this background, the management's argument that the crisis left them no choice but to freeze salaries, appears as a form of discursive cherry-picking (Interviews workers 2009; Interview trade unionist 2009).

The working atmosphere in the company is repressive, with people not talking to each other except during the breaks, and entrance and exit are controlled by security firms, checking workers leaving their shift with metal detectors to prevent theft (Interviews workers 2009).

In 2008 the local trade union started an initiative to create a union within the company. Before registering officially, the initiative remained secret and meetings took place at the town's cultural centre, so that the management could not intervene or put restrictions. But immediately after registration, hidden pressure from the management began and finally the initiative's leaders renounced. According to those concerned, one of the measures taken by the management was to offer them less and less work, which generated a fear of job loss, stress, and personal problems. However, the management never officially expressed its opposition to the creation of a trade union (Interviews workers 2008; Interview trade unionist 2009).

Currently, workers have the option to use the complaint box to address any problems. Additionally, each section has a representative in order to talk to the human resource managers or their supervisors on an individual base (Interviews workers 2009).

4.5.2 Young and flexible workforce

In early 2005 *Celestica Romania* had around 900 employees. When the economic crisis hit the company in 2008 the number of employees dropped to around 500 but already in June 2009 it once again rose to 1,100 employees. A worker concluded that '*it seems the crisis affected Celestica positively. Each month I see new colleagues – we are more and more. In the meantime, a lot of the newcomers left shortly after. They cannot face the stress and this kind of work*' (Interviews workers 2009). Most of the jobs offered in the company are operator and to a smaller amount engineering positions. Women form the majority amongst the operators, whereas men predominate amongst engineers and management. In terms of age, most of the operators are young people from the countryside. According to the Human Resources Department of *Celestica*, the average age of employees is 30 years (Interview workers 2009). The

Box 10: Economic background information on Celestica

2008 Revenue: US\$ 7.7 billion

Employees: Over 35,000 worldwide

Headquarters: Toronto, Canada

Year of foundation: 1994

Parent Company: Onex Corporation (private equity firm, 167,000 employees)

Celestica is the world's fourth largest EMS company after *Foxconn*, *Flextronics* and *Jabil* (Evertiq 2010a). It was incorporated in 1994 as a wholly owned subsidiary of *IBM* and acquired by the private equity firm *Onex Corporation* in 1996 (*Celestica* website 2010b). Its major manufacturing sites are situated in Asia (China, Malaysia, India, Philippines, Singapore, Japan), Europe (Romania, Czech Republic, Ireland, Spain) and the Americas (Canada, US, Mexico, Brazil) (US SEC 2008: 28).

Its main output are printed circuit assemblies, such as PC motherboards and communication and networking cards. These assemblies end up in servers, workstations, PCs, peripherals, and communications devices. *Celestica* also offers supply chain management as well as design, global distribution, and post-sales repair services. Major customers include *Alcatel-Lucent*, *Cisco Systems*, *EMC*, *HP*, *Honeywell*, *IBM*, *Juniper*, *Microsoft*, *NEC*, *Raytheon*, *Research in Motion* and *Sun Microsystems* (US SEC 2008: 23). Initially, *Celestica* expanded on a global level, the workforce increased and companies all over the world were acquired. This picture changed after the New Economy crisis in 2001, when their first restructuring plan was introduced (US District Court 2007: 2). Yet, the companies' workforce grew to about 47,000 employees until 2005 (US SEC 2005: 67). At the end of 2004, the company announced their second phase of restructuring efforts, now involving not only the closure of facilities, but also the reduction of their global workforce (*Celestica* News 2005). In 2005, the company declared their intention to slash 5,500 jobs over the next 15 months, thereby reducing its global workforce by ten to fifteen percent. Additionally, plants in high-cost regions such as North America and Western European Countries were to be shut down and some of the production relocated to new facilities in low-cost locations – namely Romania and China (Pickett 2005). Finally in 2009 the global workforce dropped to 33,000 (*Celestica* website 2010c). Approximately 32,900 employees have been dismissed since 2001. About 70 percent of these employee terminations were in the Americas, 25 percent in Europe and five percent in Asia, where *Celestica* today has its greatest presence. Overall, more than 50 facilities were closed or downsized, primarily in the Americas and Europe.

The pressure to reduce costs is motivated on the one hand by customer demand (Evertiq 2009g) and on the other hand by shareholders. Shareholders are currently suing *Celestica*, claiming that the company could have foreseen its bad performance after 2005, but communicated in its official statements the opposite (US District Court 2007; *Celestica* website 2010c; Answers.com 2010)

company's preferences reflected in the age and gender structure of the operators is commented by a trade unionist in the following way: '*Celestica* prefers young people from the countryside, unqualified, especially women. They show more loyalty, especially when they have children, and they are not so demanding.' (Interview trade unionist 2009)

The majority of workers live in the villages surrounding Oradea, up to a distance of 35 km to the plant, and reach the factory with the company's own bus transport. In contrast to the engineers, most operators are rather unqualified with low levels of education. After being hired, most workers receive an initial training in the company, lasting between two days and two weeks.

Further internal qualifications offered by *Celestica* are scarce and workers do not receive any certification for it that is valid outside the company (Interview trade unionist 2009).

Fluctuation of personnel amongst the operators is very high – there are only a few operators with some seniority. Most of the workers stay in the company for only twelve to 24 months. From the trade unions' perspective, it is partly a tactic of the management not to keep one employee for too long. That way workers will neither be able to achieve higher qualification in the company, nor will they gain their colleagues' confidence – this being an important requirement for the ability to organise (Interview trade unionist 2009).

Asked about the main causes for employees leaving the company, interviewed workers referred to the low salaries and the high work rhythm (Interviews workers 2009). With the global economic crisis, however, the company appears to have gained attractiveness. While before the onset of the crisis many workers – especially the well qualified but also operators – considered leaving Romania and work abroad, this has changed with the crisis, as the example of a 22 year old female operator shows. The woman, who had been a temporary worker at the *Celestica* plant via the temporary employment agency *Manpower*, had already been planning to leave Romania and work abroad, yet changed her plans against the background of the crisis and accepted an offer by *Celestica* to take her on with a stable contract (Interview worker 2009).

4.5.3 Salaries and working time

The salary of an individual worker is calculated on the basis of qualification and seniority. Although it is a fixed salary, the workers have to fulfil a certain workload for their production line in order to receive it. The piece rate they have to achieve is primarily a disciplinary measure taken by the management. Most of the time workers are able to fulfil their workload, but if orders increase, the piece rate workers have to achieve is raised as well. This results in high levels of stress. In the rare case that workers do not achieve the quota, they have to do unpaid overtime in order to comply (Interviews workers 2008/2009). The wage in the company was at least RON 650 (€ 180) net in 2008, without flexible share (Interviews workers 2008). On an average shift – depending on their age – workers earned ca. RON 800 (€ 220) to 900 (€ 250), including extra pay for work at night or during holidays, and overtime. Additionally, a 13th salary is paid, transport to the workplace is free and workers receive meal tickets. According to the interviewed workers, productivity and presence bonuses exist in theory but are hardly paid out in practice. A 25-year old operator comments that she has never received any bonuses during the six months she has been working in the company (Interview worker 2008). Low salaries are one of the most important sources of discontent, and the following complaint by a worker is representative for many interviews: *‘The wages at Celestica are among the lowest in the field. We receive a misery wage, and we are told that we should be honoured to work for such a big company.’* (Interview worker 2008)

In 2009 the company introduced a new shift system to guarantee a continuous production flow. The three-shift system with eight hours during five days per week was turned to twelve-hour shifts. A shift is followed by a 24 hours break, and

then another twelve-hour shift begins, followed by 48 hours break. Employees are now also working during the weekend, with a rotation system. Overtime has increased after the introduction of the new shift programme, especially because some colleagues do not work during the weekends. It remains to be seen if this will have effects on the payment of the presence bonus (see above). Their absence can be interpreted as a form of individualised, indirect protest. To achieve the quota for the production line other workers have to do overtime. Additionally to a 15 minute break workers have a 30 minutes lunch break – not much as they have to queue at the cafeteria before getting their meal (Interviews workers 2009), but the workload pressure ensures their discipline: *‘30 minutes are not enough to have your meal, but we try to cope with the situation – they don’t really keep our time. In addition, we don’t want to waste time, we have a quota to achieve’*, says a 30-year old female operator technician (Interview worker 2009).

4.5.4 Temporary agency work

The majority of workers at the *Celestica* plant have long term contracts. During summer holiday, students from Oradea University are hired to work as operators. Additionally, since 2006 between 30 and 40 percent of workers have been hired as TAWs, employed by the job agencies *HEY-HO* and *Manpower* (Interview trade unionist 2009).

The work of TAWs is confined to simple operations and usually lasts between two and six months. They work under similar conditions as long-term employees, but their jobs are the first to be cut if orders decrease. As a female worker mentioned, they never know whether they will still work for *Celestica* the following day. It has occurred before that they had to leave prior to the date agreed in the contract (Interview worker 2009), a practice that does not conform to Romanian labour law. From the company’s perspective the TAWs are not only flexible but also cheap, as the wage is calculated by qualification and seniority, which leaves them with the minimum.

4.5.5 Health and safety

Celestica is a modern and clean factory: *‘The inner environment is like a pharmacy’*, a female worker comments (Interview worker 2009). Due to the production needs, the temperature is regulated and there is no natural illumination. Workers do not have any knowledge about the use of hazardous substances or health problems generated by it. They complain about ergonomic and eye problems, headaches and the lack of natural illumination, as these workers’ comments show:

‘It is tiring, we work with many persons at the same assembling table, so, after each hour, we exchange

our operations, so as not to get bored. Rarely my turn comes to sit on the chair, thus I kind of feel pain in my legs.' (Interview worker 2009)

I like it and I don't like it – I don't have a choice. It's a clean work, but very exhausting. Sometimes I have unbearable headaches.' (Interview worker 2009)

'Our eyes hurt at the end of the day, especially since the shift has twelve hours.' (Interview worker 2009)

4.6 Conclusion

The role of Romanian ICT hardware production as a new competitor in Europe is still unclear. The TNCs that entered Romania after the breakdown of state socialism generate the great bulk of the ICT industry's turnover. The investments of foreign firms attracted by labour costs significantly below the Western European average, by the proximity to key markets and by investment policies such as tax exemptions and subsidised infrastructure, have so far not brought the expected high-tech jobs, nor can major positive linkages and spillover effects for the regional economy and domestic firms be observed.

Looking at the working conditions in Romania's ICT industry, major parallels can be drawn with the ICT industry worldwide: The majority of work is labour-intensive and low-skilled. Most of the workers are women, and the workforce consists of poor inhabitants from villages surrounding the factories. The wages workers receive in Romania are often below the average wage in the respective region. On top of that, overtime that is not paid accordingly leads to high levels of stress, and workers suffer from headaches and eye problems. The trade unions' power to protect workers rights' in the ICT industry is low not only because of the employers' predominant anti-union politics but also due to the trade unions' fragmented structure. As in the Hungarian ICT industry, a considerable number of TAWs are employed in Romania. These TAWs are in a very vulnerable position as they are the first ones to lose their jobs and are often dismissed regardless of contractual stipulations and in violation of Romanian labour law. The strategy behind the hiring of TAWs is obvious: They are flexible and the fast turnover leads to a lower rate of unionisation.

Box 11: The story of a female operator

The 20-year-old female operator has been working for the company for seven months (Interview worker 2008).

‘Last year I was unemployed. Before that, I had worked in a private garment workshop, but that was closed down. Reading *Celestica*’s employment advertising, I decided to take my chances. I was accepted and felt happy. I wanted a stable job and to be paid in due time. Moreover, I had no qualification and they offered me the opportunity to attend a series of trainings before being placed in the production line.

The factory is very modern. Everything is clean and the air is always conditioned: Sometimes we feel cold, but we keep the installation working, because the parts we assemble need a certain temperature. We, the operators, assemble the motherboards under the microscope. The parts are very small – otherwise you can hardly see them. I have to work hard in order to achieve my workload. I am under pressure. At the end of the day I feel very tired, although it looks easy to do the same thing all day. I sit down still in the same place for hours and do the same movements and that exhausts me. Not to mention my eyes – did you ever look through a lens for hours? I have headaches, but the doctor told me it is not necessarily related to my work; nevertheless, many colleagues complain about the same problem.

I am quite content with this job: At least I have a monthly salary and I can support my family. Nowadays everybody is scared by this crisis and it is hard to find a job. They say *Celestica* will develop in the future. I receive RON 700 (€ 191)²⁵ in the month. They also pay me night hours and the hours worked during Saturdays or Sundays. Overtime is also paid. Last month I received in total RON 850 (€ 232). I am not satisfied with my salary, but I work it out. Moreover, we produce our food on the land around our homes.’

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25 Based on an average exchange rate of 0.27307 EUR/RON for June 2008.

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Czech Republic: Computer production hub

Since the late 1990s, the Czech Republic developed into the most important computer production hub for the Western European market. Over the last few years migrant workers were increasingly hired to assemble the final products, often by temporary employment agencies. However, this picture changed with the economic crisis in 2009. The following chapter gives a brief overview of the Czech ICT industry and will take a closer look at the working conditions at a plant of the largest Contract Manufacturer (CM), *Foxconn* from Taiwan.

5.1 The breakdown of the most advanced ICT industry after 1989

Prior to 1989, the Czech part of what was then Czechoslovakia had a focus on heavy engineering and machinery production (Brynda et al. 2003: 62). Although the specialisation within the COMECON (see footnote 5) did not foresee a specific role for the country, it had the most technologically advanced electronics sector among Eastern state socialist countries. Emblematic of this was the integrated circuit production plant in Rožnov pod Radhoštěm that required some of the most demanding manufacturing know-how. After the fall of state socialism the two major electronics conglomerates – *Tesla* and *ZAVT* – were split up. Only a few of the follow-up companies continued to exist, most went bankrupt during the harsh time of transformation (Linden 1998).

Despite the proficiency in the sector, the Czech Republic did not develop as rapidly as the Hungarian ICT industry and only few Transnational Corporations (TNCs) took advantage of the existing capabilities in the first half of the 1990s – among them *Siemens* and *Ford*, involved respectively in telecommunications and automotive electronics. One reason for the companies' reluctance was the relatively more prudent approach to Foreign Direct Investment (FDI) (Linden 1998: 258). But this changed in the second half of the 1990s when governments started to offer attractive investment incentives for foreign capital. At the same time, the New Economy

boom contributed to the extension and development of contract manufacturing in Central and Eastern Europe (CEE). During the second half of the 1990s, an increasing number of TNCs set up new Greenfield Investments, leading to a steady rise of the Czech electronics sector (Hürtgen et al. 2009: 155). One of the first large Greenfield Investments was *Panasonic* in Plzeň, which started to operate its TV factory in 1998 (CzechInvest 2008: 4). In other cases *Motorola* bought a controlling interest from *Tesla Sezam* in 1997 (Linden 1998: 258), while *Celestica* opened an assembly plant for printed circuit boards in Ráječko in 1999 (CzechInvest 2008: 5).

5.2 From the New Economy crisis to the global economic crisis

The crisis of the New Economy in 2001 affected the Czech industry and some production sites were closed down: *Flextronics* for example stopped its production only two years after opening an assembly plant in Brno, and 2,400 workers lost their jobs (Higgs 2002; Drahokoupil 2004). But at the same time the Czech Republic was able to catch up with Hungary and is now competing with the country in the attraction of FDI, as industry experts point out (Interview management 2009).

The growth of the automotive sector has also attracted a number of automotive electronics suppliers including *Siemens* and *Bosch*. *Panasonic* opened a second Czech factory producing car radios in Pardubice. In consumer electronics, Asian companies like *Hitachi* and *IPS Alpha Technology* are involved in the production of LCD screens in Žatec – its majority owner being *Panasonic* (Japan). *AU Optronics* (Taiwan) and *Changhong Europe Electrics* (China) are also playing an increasingly important role. But most importantly the country became a production hub for personal computers. Nowadays, the Czech Republic represents one of the major PC production locations in Europe. Of all computers sold in Europe in 2007, 40 percent had been finally assembled there (Czech News Agency 2007a). More than three million PCs are exported from the Czech Republic every year, and the turnover grew tenfold from

Box 12: LG.Philips CRT plant in the Czech Republic

The largest Greenfield Investment in the Czech Republic at the turn of the millennium – a *LG.Philips* factory for large Cathode Ray Tube (CRT) television screens – was supported by heavy public subsidies, but had never operated within the legal framework. *LG.Philips* used dangerous chemical substances in its facility (for example toluene, acetone, isopropanol, hydrofluoric acid and nitric acid), yet failed to have a safety program in case of an accident, as was required by law. In October 2003 almost one hundred litres of lacquer with high toluene content ran out of a leak into the Bečva River, thus demonstrating the related risks.

The *Environmental Law Service* turned to the state authorities to initiate proceedings on the restriction of the operation and impose a fine on *LG.Philips*, as there was a high risk for a major accident. Responsible authorities, however, refused to act at all. Eventually, the *Environmental Law Service* was able to challenge the company's operations before court on different grounds. In 2009, the court confirmed that *LG.Philips* operated the factory on the basis of an illegal permit. In the meantime, *LG.Philips* had gone bankrupt and the parent company relocated its production to Poland, where it was offered a new package of public subsidies.

Source: Environmental Law Service website 2006

2000 to 2006 (MIT 2008: 245ff). Production in 2008 was highly concentrated and dominated by three Taiwanese CMs: *Foxconn*, *ASUSTek* and *First International Computer*²⁶ (CzechInvest 2008: 1).

According to a representative of an Original Brand Manufacturer (OBM), the majority of computer production components are imported from China and South East Asian Countries (Interview management 2009). The role of Czech facilities in the global division of labour is mainly to localise the computers – that is to adapt them to the different preferences of consumers in Western Europe. Components with a local character such as keyboards are assembled, software is installed and the final products are tested, packaged and eventually distributed. Responsiveness to market demands plays an important role in this process as the imported computers can be flexibly adapted to the market fluctuations.

Local Czech suppliers only play a subordinate role: With the exception of some printer products and equipment components, local suppliers almost exclusively deliver packaging and other non-electronic inputs (Interview management 2009). This seems to be reflected in the trade balance, too. For instance, the *Czech Industry and Trade Ministry* explained in 2007 that the country's unfavourable trade balance with Malaysia is due to the import of Malaysian components for the assembly and production of computers (Czech News Agency 2007b). Around 10,000 people were

working in the subsector of computer production by the end of 2006. The increasing role of this subsector is mirrored by the fact that this figure has almost tripled since 2000. In contrast, the number of employees producing consumer electronics, electronics components and telecommunications equipment has hardly increased, from 32,000 to 34,000 by the end of 2006 (MIT 2008).

In the aftermath of the current economic crisis, the Czech electronics industry was affected above all by its dependency on exports to Western European markets. In 2008, 81 percent of the electronics industry's exports went to the EU-15 countries (see footnote 12) (UN Comtrade 2010). Facilities are now being relocated out of the Czech Republic with the argument of lower labour costs elsewhere. The German company *Steinel Elektronik* for example relocated its factory in Raspenava to Romania with the argument of lower production costs (Evertiq 2009c). At the same time, the Czech Republic still benefits from factory relocation from Western European countries: *HP* announced in 2009 to relocate parts of their production from Germany and Scotland to the Czech Republic (Bicheno 2009). Consequently, 850 workers in Scotland, most of them employed as agency workers by *Manpower*, lost their jobs (Evertiq 2009h; GoodElectronics 2010). Although wages in the Czech Republic and Hungary are higher than in Romania, they remain low-cost locations in comparison to Western European countries. According to *Czech-Invest*, companies can save an average of 40 to 60 percent of labour costs in the electronics sector by moving production from Western Europe to the Czech Republic. The average gross wage of

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²⁶ *Foxconn* took over the operations of *First International Computer* during 2008 (Evertiq 2008c; Thomson Financial News 2008).

an employee in the Czech Republic was € 628 in 2009, while the gross salary paid by the employer was € 842 (CzechInvest 2010: 15). Although dismissals did take place in the ICT industry, it is not amongst the branches most hit by the crisis. As for unionisation, there are 59 trade union branches in Czech ICT factories, with an organisation level of 30 percent (Dobiáš 2009). Even though this is a high degree by international comparison, companies are often hostile towards the founding of trade unions. The management of *Celestica* for example was adjudged in 2008 for the illegal dismissal of a trade union founder in their factory in 2002 (Forgáč 2008; Mokrý 2008).

5.3 Migrant workers in the Czech Republic's ICT industry

The employment of migrant workers hired by temporary employment agencies seems to be a strategy to keep wages down and be able to easily dismiss workers in periods of weak demand. However, not all migrants are contracted by agencies, but some have direct contract with the companies. In the last few years, significant economic progress has encouraged tens of thousands of migrant workers to come to the Czech Republic every year. In 2007, the number of migrants legally residing in the Czech Republic grew by 70,000 (Rozumek 2009: 1). Aside from a relatively high share from Vietnam, migrant workers come from Mongolia, the Ukraine, Romania, Bulgaria, and traditionally from north-eastern Slovakia, the poorest Slovakian region. In smaller numbers, they also come from Poland and Moldova.

The vast majority of Vietnamese migrant workers come to the Czech Republic with the help of temporary employment agencies (Krebs and Pechová 2009; Pechová 2009). Temporary agency work was put on a legal footing only in 2004, but had already grown to 35,000 Temporary Agency Workers (TAWs) in 2007 (Arrowsmith 2009: 3). In comparison with Bulgaria, Hungary, Slovakia, Slovenia, Romania and Poland, the Czech Republic has the highest penetration rate with TAWs, namely 1.9 percent (CIETT 2009: 35). The growth of temporary agency work was triggered by the rapid development of sectors such as automotives and electronics manufacturing, led by large TNCs (Arrowsmith 2009: 7). As Rozumek points out (2009: 2), the majority of TAWs are migrants: *'It is not common for a native Czech citizen to be employed by a job agency.'*

This also seems to be the case in the ICT industry, where according to information from trade union representatives temporary agency work is mainly done by migrant workers, as in the case of *Foxconn* or *Panasonic*. Since 2007, Vietnamese have started to take up employment mainly in the

areas of electronic equipment and car manufacturing (Krebs and Pechová 2009: 12). Most of them work on the assembly lines, where wages are low, not reaching the average income. According to Czech legislation, TAWs must receive the same pay and conditions as workers employed directly by the company. Fact is though, that they are often paid less (Interview Studnicna 2009).

Migrant workers hired by agencies are among the most vulnerable groups of the workforce. Employment is a precondition for their residence permit, so that job loss and the inability to acquire new employment leave them the choice between a life of illegality or return to their home countries. The latter in particular is difficult, as they are often highly indebted to agencies that hire them. Furthermore, their representation through trade unions is problematic. Collective agreements bargained in companies do not apply to workers employed by agencies (Krebs and Pechová 2009: 25), and trade unions do not have access to contracts between agencies and migrant workers (Interview Studnicna 2009).

The economic crisis has had a harsh impact on migrant workers in the Czech Republic – not only in the ICT industry. In winter 2008 and 2009 companies started to dismiss migrants – TAWs as well as those employed directly (Krebs and Pechová 2009: 12). In the period between January and June 2009, the number of non-EU foreigners employed in the Czech Republic decreased by over 20 percent. Czech migration policy changed radically, and today it is increasingly difficult to obtain a visa (Khayrullaev 2009). On top of this, the government started initiatives such as paying migrant workers one-way tickets and cash to leave the country (Perry 2009). However, very few migrant accepted this procedure, being highly indebted and having no chance to repay their debts back in their home countries. As reported recently, many Vietnamese 'solve' this situation by changing their worker residence permit status to an entrepreneur residence permit, thus trying to find employment again – often under very precarious and exploitative conditions (Krebs et al. 2009).

5.4 Foxconn – a Taiwanese electronics giant in the Czech Republic²⁷

Foxconn Czech Republic s.r.o. has been created in May 2000 and is a local subsidiary of the world's biggest Electronics Manufacturing Services (EMS) company, the Taiwanese *Hon Hai Precision Industry Co.* (better known under *Foxconn*). *Foxconn* was selected as a case to get more detailed information on working conditions in general and on the situation of migrant workers in the Czech ICT industry in particular.

5.4.1 Company profile

One of the incentives for starting its production in the Czech Republic was a ten-year tax holiday the Czech government granted *Foxconn*. Even though wages in the Czech Republic are on average about five times higher than in China, one of the advantages of producing in the EU was that *Foxconn* can thus avoid tariffs put on TV sets made in China (Evertiq 2007a). *Foxconn*, producing amongst others for *Cisco* and *HP* (CzechInvest 2010: 6), was in 2008 the second largest exporter and the third largest company by revenue in the Czech Republic. Its revenues in 2003 added up to about Kč 41 billion (€ 1.3 billion)²⁸ (Foxconn website 2010) and increased to € 2.9 billion in 2008 (Amadeus 2010).

Currently, *Foxconn* operates two facilities that are located in Pardubice and Kutná Hora: The first plant was opened in 2000 in Pardubice on the premises of the former electronics conglomerate *Tesla*. According to our research, around 4,500 people work at the plant by now. Computers, monitors, set top boxes and mobile phones are being produced here, the majority of products then exported to the European market.

In 2008, *Foxconn* started to operate their second plant in Kutná Hora, producing mainly LCD screens (Evertiq 2008d). Due to the economic crisis, the plant dismissed workers in 2008 (Evertiq 2008e), and in July 2009 only 800 workers were still employed. But already in summer 2009, 1,000 additional workers were to be hired until the end of the year (Evertiq 2009j) and *Foxconn* announced at the end of 2009 to start building a new plant in Kutná Hora (Evertiq 2009k).

5.4.2 Working conditions at Foxconn's plant in Pardubice

A high level of monotony characterises the work at *Foxconn's* plant in Pardubice, as it is typical for the sector. Workers are under pressure to fulfil the norms and complain that it is impossible to have a proper meal if there is a queue during the 45 minutes lunch break. Recently *Foxconn* in Pardubice received a fine from the local labour inspection for half a million Czech crowns (approximately € 20,000) for violation of rest periods (Evertiq 2010c).

Employees are divided into a group of core employees who have direct contracts with the company, and a second group of non-core employees

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27 The information of this chapter is based on desk research as well as interviews with a representative from the trade union KOVO, a worker of Foxconn and sources that were made anonymous.

28 Based on an average exchange rate of 0,03143 EUR/CZK for 2003.

having temporary contracts with the company or contracted through a labour employment agency. According to information from trade unions, 58 percent of workers at *Foxconn* in Pardubice and Kutná Hora were employed by agencies in 2009. However, the amount varies according to the order situation.

Core employees are regularly working in three shifts of eight hours per day, but overtime is no exception. Before the crisis most of these workers received open-ended contracts, but since 2009 fixed-term contracts are common. Wages include an important flexible share, depending on the amount of night shifts and overtime worked by employees and the bonus – from Kč 2,000 (€ 78)²⁹ up to Kč 15,500 (€ 605). Bonuses are paid for achieving the norms and for working the number of required hours. Given that they can be reduced according to time absence and mistakes, they function as a disciplinary measure.

In the company bought from *Tesla*, trade unions already existed and were subsequently taken on. Today, the union has 500 members but does not represent the TAWs.

The second group of non-core employees consists mostly of migrants. Before the crisis, migrants had temporary contracts. Similarly, only very few native Czechs worked as TAWs. For TAWs it is difficult to receive a direct contract because of an agreement between *Foxconn* and the agencies, which stipulates that employees cannot directly change their employer. It is estimated that only ten percent of migrants have a direct contract with *Foxconn*.

In 2010, migrant TAWs in the plant were primarily from Vietnam as well as from Mongolia, Romania, Bulgaria and Slovakia. In 2009, twelve different nationalities could be found (Interview Studnicna 2009). In order to come to the Czech Republic and work for *Foxconn*, migrant agency workers often have to get into debt to pay temporary employment agencies – in some cases amounts up to US\$ 9,000 (Pechová 2009: 2).³⁰ A Vietnamese migrant working for *Foxconn* explained: '*we had to borrow from both friends and banks ... Before leaving for the Czech Republic, we thought we would pay off the debts in about a year ... At present, we think we will have everything paid off in about three years*' (Pechová 2009: 2).

After three months working for *Foxconn* in Pardubice, an interpreter came to them, demanding that they sign a new contract. However, '*the text*

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29 Based on an average exchange rate of 0,039 EUR/CZK in 2010.

30 To have a closer look at the practice of these agencies and the problem of indebtedness of migrant workers in the Czech Republic see Krebs and Pechová (2009) and Krebs et al. (2009).

was not in Vietnamese so we did not know whether it was a contract related to the end of our probation period or to its extension, or a change of our work specification. Allegedly, the company was moving elsewhere. Our interpreter told us to sign and so we signed' (Pechová 2009: 2). In fact, the workers had just signed their contract of termination and a new working contract for *Foxconn* in Kutná Hora. This example demonstrates how vulnerable migrant workers coming to the Czech Republic are without any knowledge of the legal system or the language.

The problem however is not only abuse of their situation, but, the general precariousness of their work at *Foxconn*. According to trade unions, the short periods they work for the company, sometimes only weeks or several months, makes it difficult for the workers to establish any kind of relationship amongst themselves. Trade unionists underline that the management is using this as a strategy to hamper workers' organisation, thus curtailing the unions influence and power (Interview Studnicna 2009). Hence, the main problems regarding the working conditions of migrant TAWs in Pardubice are the high levels of job insecurity and the extensive working time. In contrast to the core employees, they are working in twelve-hour shifts six days a week.³¹ Clearly this is against the Czech Labour Code that requires the agency and the user company to ensure that working conditions of agency workers are equal to that of comparable core employees (Arrow-smith 2009).

There is no exact information about the wages of migrant agency workers at *Foxconn* in Pardubice, and as they also receive subsidies for accommodation and transport it is difficult to compare their wages with those of core employees. It seems, however, that they earn similar wages as the core employees but work more hours. That would confirm the conclusion of the research study on Vietnamese workers in the Czech Republic, namely that in many cases they receive lower wages, wage supplements and bonuses than regular Czech workers (Krebs and Pechová 2009: 24). Coming to Pardubice for a limited period of time, they are living in housing facilities supplied by the agencies. The conditions seem to be inadequate: it was reported in 2007 that 30 people must share one shower, one toilet and one kitchen (Evertiq 2007b).

Core and non-core employees were both affected by the crisis in particular ways. Czech workers who had direct open-ended contracts with *Foxconn* are confronted with increasing job insecurity in form of temporary contracts (see above).

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³¹ This information also was confirmed by interviews made with *Foxconn* workers from Mongolia (see Marksova-Tominova 2009).

Furthermore, the company reduced overtime work, which again decreased the average workers income by almost 20 percent. As regular wages are very low, this created problems to cover daily expenses. In turn, migrants as non-core employees were hit even harder by the crisis as they were the first to have to leave when the first dismissals of several hundreds of workers were announced in summer 2008. Most of those who had to leave were not employed by agencies but directly by *Foxconn*. They had, however, temporary contracts that were expiring at the time – such as a group of Mongolian workers (see next Subchapter).

5.4.3 Interview with a Czech *Foxconn* worker

The interview was done in May 2010. The *Foxconn* employee has been working for the company for several years, because there are not many other job opportunities in the region. The former craftsman works on the assembly line, mounting components into a final product.

Why do you want to stay anonymous?

I could be fired from the company otherwise. It is not allowed to give information about the company. This is already mentioned in the work agreement.

How does your workplace in the production section look like?

There are large halls, several production lines within. Every operator is usually carrying out the same, monotonous work. The factory is located at the end of the town. Here we produce computers, monitors, set top boxes and also mobile phones. Usually, we assemble the components that are coming mainly from China into a final product. We produce little for the domestic market, the great majority is made for the European market.

How does one of your normal working weeks look like?

We work in a three-shift regime in most departments, in others in two shifts. So usually we have eight-hour shifts that change regularly. But when there is a large increase in production we work more, then again less. There are times when we go Saturdays or even Sundays to work. It happened that we had to do twelve-hour shifts for three months when the production volume increased. All of that is allowed by the fact that our work time is distributed unevenly according to the contract. Also, we receive the preliminary calendar actually at the start of a period, but the precise one we only receive one week in advance. The personal life of the employees is not being taken into account at all. You either want to work, or leave. The overtime stresses some of the workers.

Are the workers stressed to fulfil the norms?

There is a shift manager walking around, stressing that the norms need to be met. And when they are not met then he focuses on the line. So it is better for the employees to meet them. It is not allowed to make many mistakes. Mistakes have to be fixed then and that means losing part of bonuses. If someone often makes mistakes, he will be fired.

What is the average income of an operator?

I do not know what the average is but I get Kč 15,000 net (€ 585).³² This varies according to how many night shifts, overtime and bonuses I have. My bonus is around Kč 2,000 (€ 78) but the employers can decrease it for mess on the workplace, wasters etc. This applies to the whole production line, so if one person does not do a good job, the whole line gets affected. There are bonuses for meeting the norms and for meeting the number of required hours. If someone is missing for more than four hours then he will lose parts of his bonuses for that month. If a worker is ill he will get no bonus.

Do your colleagues have any work-related health problems?

Some do have problems but I do not know whether they are work-related. Some have problems with eyes, some with breathing, asthma. *Foxconn* made some changes against ergonomic problems but they also serve the increase of the quota and the rise of productivity. Now, there are better space arrangements, things are put closer together to minimise transport. New gadgets make the work easier.

What kind of contracts do the employees have?

Those who have been employed for a long time have an open-ended contract, but most of the people that started last year and this year have fixed-term contracts. The latter ones last usually for a year and sometimes even only for half a year.

Does the economic crisis have any further effects on the working conditions?

The wages have been increasing steadily. Then in 2010 they went down for the first time because there was no overtime work and the four-shift regime was abandoned, so we lost the bonus for it as well. Now the wages should increase a little. Several hundred of non-core employees had to go because of the crisis. Most of them were foreigners. Furthermore, *Foxconn* is definitely trying to use the crisis for its benefit, so as not to raise wages and so on. It uses it as an argument in negotiations with the unions as well.

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³² Based on an average exchange rate of 0,039 EUR/CZK for 2010.

How many migrant workers are currently working in the company?

The amount of foreigners varies according to the momentary production volume. Sometimes it is 30 percent, sometimes it is close to 50 percent, but in some departments it can also reach 70 percent. The foreigners come and go. At the moment, most of them are Vietnamese followed by Mongolians, Bulgarians, Romanians and Slovaks. The number of Mongolians decreased because during the crisis it was necessary to fire workers. The visas of Mongolian workers, who were previously hired as a group, were just about to expire, so were their contracts. So they left because they were the easiest to get rid of.

How many migrant workers are hired through agencies and for how long do they stay?

I would say 90 percent are hired through agencies. There are many different ones, I know mostly of *Xawax*, a Slovakian agency. Some of the foreign workers, like the Vietnamese, have been here three years non-stop. So they are probably hired for a certain period of time, they cannot send them home just like that because it is very far away. But when it comes to, let's say Bulgarians, it happens, that during the reduction of production volumes they would be sent home for a month. Then they would come back. But sometimes they don't, it also depends on who it is.

Are there differences between the working conditions of core employees and Temporary Agency Workers (TAWs)?

The agency workers usually work in twelve-hour shifts five or six times per week, whereas the core employees do eight hours shifts five times a week. But there are also periods when the core employees work more. The foreign TAWs usually came here to earn money, so they need to work as the employer wants them to work. I heard that when signing the contract with an agency they also sign a work termination contract without a date and without receiving a copy. So probably they cannot protect themselves from being fired. But this is only what I heard, I haven't seen it myself. The working time is flexible, which is also the reason, according to *Foxconn*, why it hired TAWs in the first place.

Is there a certain type of work that is 'reserved' for TAWs?

Some customers have stable production at a certain level and that is where mainly core workers are placed. For the customer who has big production swings the employer makes use of the TAWs because when there is no work, he does not need to take them.

Could you say that Foxconn is abusing the position of migrant workers who are stressed of being fired and sent home?

I think it does. They always accept everything that the employers order. I heard they were threatened that their visa would not be extended if they do not take the overtimes. I doubt that the migrant workers can do anything in order to improve their conditions. During the crisis many foreign workers, contracted by Foxconn, were fired, around 20 percent of them. The ones working for the agencies stayed.

How are the relations between the union and the management?

Now it seems that they argue quite a lot. The union members even wrote some petition. The management has summoned us all to tell us that the unions are a threat to the company. It said that the unions have unrealistic wage demands and that they may cause the company to move further east. Since there are not many unions, it is hard to improve the rights of workers dramatically. But I know that they tell people what the company can't do and what the employees can do.

5.5 Conclusion

Within the COMECON the Czech Republic had the most advanced ICT sector. After the decline of the industry in the time of capitalist transformation, the country evolved into the production hub of computers for the Western European market since the turn of the millennium. Looking at the structure of the labour force, the Czech Republic has experienced an influx of migrant workers from CEE countries and Asia driven amongst others by the ICT Industry.

Employing the example of *Foxconn*, the impact of the crisis was discussed. It was shown that migrant workers were hit the hardest by the crisis, as they were the first who had to leave the company. However, a further effect of the crisis appears to be that the boundary between migrant non-core employees and native Czech core employees is vanishing. In consequence, also Czech workers are more often forced to accept temporary contracts. In other cases companies reacted by decreasing the number of core employees and increasing the number of TAWs, who are not organised in trade unions. It would be interesting to analyse through future research if precarious working conditions such as temporary agency work, which have affected primarily migrant workers, are now becoming more common in the Czech ICT sector in general.

Conclusion

After the fall of the Berlin Wall many governments in the post-socialist countries in Central and Eastern Europe (CEE) have sought to attract investment in the ICT sector. Prior to 1989, many CEE countries had already developed an electronics and ICT industry within the COMECON framework and thus had an industrial tradition in the sector. The more tangible assets, however, such as production technology and facilities were largely outdated by the end of the 1980s. Hence, in most countries of the region foreign Transnational Corporations (TNCs) – and in particular Electronic Manufacturing Services (EMS) companies – became key actors in re-shaping the sector. The integration of the national remnants of the ICT industry into global production networks of TNCs was widely embraced as a means to modernise and upgrade the sector. Hungary and later on other neighbouring countries, including the Czech Republic and Romania, envisioned a scenario in which low-wage export platforms would be the starting point of an economic and social upgrading trajectory. These platforms were thought to gradually increase the value added of production activities and to lead to linkages with and knowledge spillovers (e.g. know-how transfer) to local firms. These were supposed to then improve the manufacturing and innovation capabilities of local firms. This industrial upgrading of foreign owned plants and local firms was also thought to benefit workers as the activities that add higher value require more skills and promise better working conditions (Plank and Staritz 2010a).

The high expectations linked to the foreign TNCs are at odds with the experiences of CEE countries in the ICT sector since the 1990s. The Hungarian case has shown that potential positive effects of TNCs on economic development are ambiguous and can even promote a dual economy. On the aggregate level, the huge influx of Foreign Direct Investment (FDI) from Original Brand Manufacturers (OBMs) and Contract Manufacturers (CMs) since the 1990s has driven much of the economic growth and contributed to employment creation. At the same time, however, the industrial upgrading has remained limited to

the plants of TNCs. These plants, most of them being built from scratch, have taken over more corporate functions, in particular since the 2001 crisis. Hence, they are not extended workbenches for Western European plants anymore but compete with other locations in the region. In contrast to this partial upgrading and modernisation, the often cited wider benefits of FDI on the local economy like local linkages with suppliers and knowledge spillovers have remained lower than expected (Hürtgen et al. 2009; Plank and Staritz 2010a). If local firms are integrated as suppliers they are generally found at lower-tier levels and are mostly involved in the provision of non-core products and services. The situation in Romania and the Czech Republic seems to be similar regarding the lack of linkages, pointing to the economic enclave character of the industry in CEE. Given Romania's newcomer status and its less developed ICT industry as compared to Hungary or the Czech Republic, one might speculate about a more significant emergence of linkages in the future. However, it is doubtful if it will achieve a similar position in the global division of labour, as Romania is not only competing with China but also with Hungary and the Czech Republic, which already managed to partially upgrade while keeping wages relatively low in comparison with Western European countries. The dominance of foreign firms in all three countries and in the CEE region in general is also a major reason for the limited occurrence of spillovers, since very few local firms remain in the sector. In addition, policies tended to favour large foreign investors and hence it has been difficult to establish smaller local firms. In short, there exist only very few local firms that could absorb potential spillovers.

A key reason for the low level of linkages and the limited spillovers is the organisationally and geographically concentrated supply base which leaves little room for potential local supplier firms – regardless of their capabilities (Philips and Henderson 2009). The Hungarian experiences with government sponsored supplier integration programmes underline this assessment. Hence, the strategic interest of TNCs might not allow for a more significant involvement of local sup-

pliers and knowledge spillovers. This also points to CEE's role in the international division of labour as export platforms for the European region, where the geographic proximity to core markets is a key criterion, alongside government incentives and relatively low wages. A very concise example is the Czech Republic where around 40 percent of computers sold on the Western European market are finally assembled and adapted to European consumer preferences. Despite this important role, the lack of deeper integration with the host economy means that these plants are constantly under pressure as they are subject to the global (relocation) strategies of OBMs and CMs.

The country and company case studies in this report highlight how the permanent restructuring of global production networks translates into the lives and working conditions of assembly workers in CEE. The findings from this report confirm in many aspects the picture emerging from similar studies focusing on other regions. As regards the promise of high-tech jobs, the ICT sector in CEE is still based on a significant amount of labour-intensive activities that require a limited number of skilled workers, while the majority of work can be done by un- and semiskilled workers. The assessment of their working conditions sheds a differentiated light on the impact of the ICT industry on workers. In particular the dominant role of EMS companies in the restructuring process in CEE has contributed to the prevalence of neo-Taylorist work practices (Hürtgen et al. 2009). This 'McDonalds' approach (Lüthje 2002) has limited the scope for skill-enhancement and learning opportunities for low-skilled workers from the onset and has resulted in working conditions that are characterised by low wages with a high variable share, flexible working time regimes and precarious employment relationships as well as hostility towards trade unions. Workers see the low level of wages as a major source of their dissatisfaction. The case study about *Celestica* in Romania shows that workers are sometimes still dependent to compensate the low wages by subsistence economy. Case study evidence from Hungary suggests that in some plants the net wages are just above the national minimum wage and workers have to work night and weekend shifts to achieve a better wage. Furthermore, the introduction of flexible working time frames at the plant level may result in formally eliminating overtime – even when workers do overtime – and, hence, circumvent overtime payments. The return of twelve-hour shifts in the case of Romania reflects another aspect of a company strategy that seeks to increase company flexibility without paying a premium for overtime. The prevalence of temporary agency work is grounded on the same objectives, with the effect of an increasingly precarious position of these workers. In the Czech case of *Fox-*

conn, this discrimination is further aggravated by the use of migrant workers that are facing a two-fold discrimination: they are discriminated against as temporary agency workers and as migrant workers, indebted and dependent on their employer.

As regards the situation of trade unions in the ICT sector the hostile attitude of most CMs and also some OBMs towards organised workplaces is exacerbated by the CEE context. The legacy of the socialist system and the role of trade unions therein continue to handicap organising efforts. On the other side, unionisation rates in CEE are quite high when compared to the global level in the sector. In some companies which have been taken over from Eastern conglomerates also former structures of unionisation prevailed – for instance in the case of *Foxconn* in the Czech Republic. But trade unions have also tried to organise workers in the many new Greenfield locations despite the difficult environment – with success, as in the case of *Nokia* in Romania, or without success, as in the Romanian facility of *Celestica*. However, a relatively high unionisation rate does not automatically translate into a strong bargaining position vis-à-vis the companies. The relationship between the management and the unions seems to be fragile judging from the fact that trade unionists at the company level prefer to remain anonymous. More importantly, trade unions are very fragmented in many CEE countries. The decentralised bargaining system further weakens their power and explains in part why the positions of company-based unions are in some cases very close to the management's interests. The findings of the report show that further research on the – sometimes contradictory – role of trade unions in the ICT industry in CEE is necessary.

In conclusion, the report reveals that the expectations regarding economic and social development that have been associated with the ICT sector are rarely met in the CEE region. Certainly, exports and new jobs arise from these investments and this in turn often leads to a (temporary) decline of unemployment. However, the quality of these employment opportunities remains ambiguous as working conditions are increasingly precarious and wages are relatively low. This process has been aggravated by the global economic crisis – and will have lasting effects after the crisis when companies have recovered. Further investigation about the division of employment into core and non-core workers and the relation between native and migrant workers as well as between TAWs and workers directly employed by the company are necessary.

Appendix: Country Profiles

Bulgaria: Renaissance of the hard disk manufacturer?

Within the COMECON framework (see footnote 5) Bulgaria was mandated with the production of hard disk drives. The Bulgarian firm *DZU* was designated as the principal disk drive supplier for the whole computer production in the region. This led *IBM* to engage initially in subcontracting with Bulgarian producers in the early 1990s but finally Hungary was picked as the coming European disk drive base (Linden 1998). During the 1990s the industry fared rather badly as reflected in the plummeting production in formerly important areas. For instance, the production of microcomputers dropped from 36,000 units in 1990 to 2,000 units in 1994 and declined further until the end of the 1990s (Reed 1999: 47). The bankruptcy of *Microelectronica*, the former state-owned integrated circuit manufacturer located in Botevgrad, is another example that illustrates this decay in the 1990s (Stanchev 2000).

In recent years the production of the electronics sector has increased, but has only recently attained its 1990-level, when production was estimated at US\$ 300 million (Reed 1999, 2003). Given the higher capital-intensity today, employment levels are not comparable with state-socialist times. Hence, the whole electronics sector employed only around 37,000 persons in 2007, out of which around 12,000 worked in the ICT sector (Eurostat 2010). Within the ICT sector, the segment of office machinery and computers has increased, but its production value was still only half the amount of TV, radio and telecommunications production in 2007 (InvestBulgaria 2009). Among the largest companies in the electronics sector are the Belgian Electronic Manufacturing Services (EMS) company *Epiq Electronic* and the privatised *DZU*, now a 100 percent affiliate of the Hungarian EMS company *Videoton*, as well as German *SET* (PCB manufacturer), Belgian *Melexis* (integrated circuits), Italian *Arctronics* (producer of passive components), the Japanese car electronics producer *SE Bordnetze*, including its domestic subcontractors, *Ates* and

Arkomat, and the Bulgarian University spin-off *Datecs* (payment terminals, printers, cash registers). Further, some remnants of the state socialist past are the cable producers *Elkabel* and *Gamakabel*. Most of the firms are located in Sofia and in cities along the way to the Black Sea's port Burgas, including Botevgrad, Stara Zagora and Karnobat.

Estonia: Outsourcing location for Scandinavian telecommunications

Under state socialism, Estonia had developed some capabilities in radio electronics and semiconductor production. However, almost no capabilities survived beyond the 1980s (Kalvet 2004). The development of the Estonian ICT industry since the 1990s is closely related to the outsourcing activities of Finnish and Swedish Transnational Corporations (TNCs), which have accounted for roughly two thirds of Foreign Direct Investment (FDI) in Estonia (InvestEstonia 2009). In particular one firm has strongly dominated the industry until recently: *Elcoteq* (see Box 1).

It comes at little surprise that the telecommunications segment dominates the ICT sector, given the importance of *Elcoteq's* operations – that are now continued by *Ericsson* – while computer and office machinery play a limited role. Besides, other smaller European EMS firms such as Swiss *Enics*, Finnish *Ensto*, Swedish *Note*, *Scanfil* and *Incap* have invested in Estonia as well as the Finnish industrial automation producer *JOT Automation*. Cable producers *Draka Cables* (part of the *Draka Group*, one of the largest cable producers in the world and formerly known as *Nokia Cables*) and *Volex* are present (Amadeus 2010). In 2008, the ICT sector accounted for more than five percent of total manufacturing turnover (Eurostat 2010). To a large extent, ICT goods sold in Estonia are feeding back into supply chains of Scandinavian TNCs. Hence, the key export markets are Finland, Sweden, Denmark, Latvia and the UK and the leading segments of Estonian ICT manufacturing are heavily export-oriented (InvestEstonia 2009).

Latvia: Inventor of the Minox

Latvia's electronics industry had an important role during state socialism since conglomerates such as *Vef* and *Alfa* were among the top suppliers of radio-electronic products and equipment in the COM-ECON (Dyker 1996). Also, the industry has been associated with the Minox, a mini-camera prominently featured in spy-movies, which was invented and first produced in Latvia. But very little capacity remains from these days. The ICT manufacturing sector drastically declined during the 1990s and only started to consolidate by the late 1990s, when some foreign enterprises started to invest there.

The former state enterprises have either closed down or undergone massive restructuring to survive on the market, including *VEF Radiotehnika* (consumer electronics and EMS activities) and *Alfa Rpar* (semiconductors and EMS activities). Other important firms include French cable producer *Axon*, Latvian EMS company *Hanzas Elektronika* as well as Latvian start-up *Saf Tehnika* (telecommunications).³³ The sector is concentrated around Riga and its vicinity (LETERA 2004).

The contribution of the electronics sector is modest, accounting for roughly two percent of total manufacturing output in 2007 (Auzane 2008). More than 70 percent of production is exported, predominantly to the neighbouring Baltic countries Estonia and Lithuania as well as Russia, Belarus and Scandinavian countries (LIAA 2010).

Lithuania: Declining TV set maker

Until the end of the 1980s Lithuania was an important location for the production and development of television sets and equipment, semiconductors and radio measurement equipment. An important part of the production fed into the Soviet military-space complex. However, the sector strongly declined after the fall of state socialism and it only started to rebound by the late 1990s.

The production of electronic components and audio/video equipment constituted the most important sub-segments until some years ago. This was due to the important role of former state enterprises in this area such as *Ekranas*, *Vilniaus Vingis*, and *Šiaulių Tauro Televizoriai* that accounted for the lion's share of the sector's total production (Stepanoviciene et al. 2004: 43). For instance, *Vilniaus Vingis* was among the leading producers of deflection yokes, a component that was used for the manufacturing of colour picture tubes. Among its major clients were *Samsung*, *Philips*, *Thomson* and *LG Philips Displays* (World Bank 2002; see also Stepanoviciene et al. 2004). Only *Šiaulių Tauro Televizoriai* survived the increasing international competition during the last years and the

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³³ Own research on the Latvian database ExIm (www.exim.lv) [Accessed April 24, 2010].

industry's re-orientation towards digital TVs. This technological change in the production of TVs has hit Lithuania quite hard and is also mirrored in employment changes. Total sector employment peaked in 2004 with almost 12,500 employees and has declined to a bit more than 7,600 in 2006 (Eurostat 2010). Other large domestic firms include cable producers *Lietkables*, *Teltonica* (telecommunications) and *Vilniaus Ventos Puslaidininkiai* (semiconductor devices). Apart from that mid-tier EMS companies *Kitron* and *Note*, have set up plants since the early 2000s.

In 2008, ICT production in Lithuania accounted for 1.49 percent of the total manufacturing turnover (Eurostat 2010). In terms of exports ICT products accounted for 3.5 percent of total Lithuanian exports in 2008 and the segment of audio and video equipment was the most important therein (Statistics Lithuania 2009). Major export markets are Russia, Latvia and Estonia while most ICT imports came from Poland, China, Germany, the Netherlands and Finland in 2008 (ibid.).

Poland: TV set maker of Europe

Under state socialism, Poland, together with Bulgaria, East Germany and Hungary, was tasked to develop computers (Piątkowski 2004). Until the late 1970s it was able to draw on Western technology, but in the 1980s, under martial law, the sector's development was hindered by its isolation from the West and the increasing distrust of Russia towards the Polish regime. Two large conglomerates, *Mera* and *Unitra*, were active in the field of ICT production, including consumer electronics, electromechanical switches and computers (Radoševic 2004b). By the end of the 1980s nearly 200,000 workers were employed in the sector (Linden 1998).

Most of the offshoots of *Mera* and *Unitra* did not appeal to foreign investors, with a few exceptions such as the domestic appliance producer *Polar*. However, Poland could use its large domestic market as a bargaining chip in the (privatisation) negotiations with TNCs which were initially attracted by these new market opportunities. Hence, some major investment deals in telecommunications (*Alcatel*, *Lucent* and *Siemens*) and televisions (*Thomson*) were struck in the first half of the 1990s (Linden 1998; Piątkowski 2004).

Compared to Hungary and the Czech Republic, the Polish electronics industry contributes relatively little to the overall economy, accounting for only 3.25 percent of total manufacturing turnover in 2008 (Eurostat 2010). But this small share conceals that the sector has grown rapidly from a very low level since the 1990s. It has attracted a significant share of overall FDI destined to Poland. While the initial investments were predominantly motivated by Poland's huge domestic market, gradually, as

output expanded, the established players also started to export an increasing share of production to other European markets (Piątkowski 2004). Along the same line, TNCs increasingly perceived Poland as an export platform with low labour costs and government incentives in proximity to key markets in Europe. In particular, the investments of Asian Original Brand Manufacturer (OBM) companies, including South Korean *LG* and Japanese *Sharp*, *Toshiba*, *Orion* and *Funai*, made Poland one of the most important production locations for digital TV sets and related activities.

In 2007 the Polish industry supplied 20.2 million TV sets, of which roughly 90 percent were exported, in particular, to Germany, France, the UK and the Netherlands (PAIIZ 2008). It is estimated that by 2010 approximately half the television sets sold in Europe will originate from Polish factories (PAIIZ and PricewaterhouseCoopers 2010: 33).

Also, two of the key EMS providers are operating out of Poland. *Jabil* has a huge factory in Kwidzyn producing, among other items, TV sets, while *Flextronics* has been active in Poland since 2000 (Evertiq 2009m). More recently, *Dell's* decision to set up a plant producing (laptop) computers in Łódź, and the subsequent closure of its production facilities in Limerick, Ireland, has attracted media attention (see Box 2). *Lenovo*, an important Chinese computer producer, has thought about setting up its first European production facility in Poland, but eventually withdrew its plans (Evertiq 2009n). Many of the EMS companies are operating out of Special Economic Zones (SEZs) (see footnote 4). For instance, *Sharp*, *Orion*, *Flextronics* and *Jabil* are formally located within the Pomeranian SEZ, while *LG* and *Toshiba* are located in the Tarnobrzeg SEZ.

Slovakia: Car and consumer Electronics

During state socialism the electronics industry played no significant role in the Slovak part of then Czechoslovakia, except for *Tesla*, which used to produce TV sets. During the 1990s, FDI in the sector was very limited and the only larger investment occurred when *Alcatel SEL* (French-German Joint Venture) bought the former telecommunications firm *TESLA Liptovský Hrádok*. The rationale was to gain market access in the under-served telecommunications market and to take advantage of the existing skilled, but cheap, labour force (Smith 1998: 39ff; Sirak and Rehak 2005).

Since the end of the 1990s the country has seen a steady stream of investment pouring in with automotive and ICT sectors being among the most prominent targets. As a result, Slovakia has emerged as an important assembly platform for both industries, resulting in largely foreign-owned and dominated sectors. With regard to the ICT in-

dustry, the leading sub-sector is the production of radio, television and communication equipment, followed by insulated cable production. Office machinery and computer production are of minor importance (Trend Analyses 2009). Hence, the key players in the ICT sector fall roughly into two categories: The first group is strongly connected to the automotive industry and includes key suppliers such as *Leoni*, *SE Bordnetze* and *Kromberg & Schubert* that are amongst others involved in cable production for car makers such as *VW*, *Audi*, *Skoda*, *BMW* and *Nissan*. The second group consists of OBMs such as *Samsung*, *Sony* and *Panasonic* that manufacture digital TV sets and monitors, MP3 players, DVD-/Blue-ray players and recorders. Over the last years *Sony* and *Samsung* made significant investments, adding to Slovakia's image as an increasingly important manufacturing hub for LCD products. However, against the background of the global economic crisis *Sony* sold 90 percent of its Nitra plant, one of its largest TV manufacturing sites worldwide, to *Foxconn* (Evertiq 2010d). *Samsung's* latest investment makes it the third most important firm in the Slovak economy after *VW* (automotive) and *Slovnaft* (oil refining), with a revenue of € 3.5 billion (TREND 2009). With regard to CM presence, until recently only Swiss *Enics* was present in the country, but *Flextronics* has acquired *SloMedical* in late 2009 and plans to expand its medical electronics business (Evertiq 2009o). Looking at the ICT industry in Slovakia from a geographical perspective, it can be said that the sector is spread over the whole country. Major ICT operations are located in and around the cities of Galanta, Nitra, Trnava, Košice, Trenčín and Žilina (Trend Analyses 2009). In particular the region around Žilina was for some time considered as a potential 'Slovakian Silicon Valley', reflecting the aspirations that it might develop into a vibrant ICT cluster. But so far, these hopes have not materialised (Sirak and Rehak 2005).

Ukraine: A Mexico for Europe?

Historically, the Ukraine occupied an important role in the former COMECON's division of labour in the ICT sector and inherited around 25 percent of the vast Soviet military-industrial complex (Reed 1999). Prior to 1989 this had ensured a steady flow of state funding, state-of-the-art equipment and facilities, as well as top specialists in the area of ICT. But after the break down of the Soviet system, these military-industrial enterprises faced hard times. Against the background of a strong contraction of the Ukrainian economy – by 1998 official GDP had decreased by 45 percent compared to 1991 (UNDP Ukraine 2010) – the importance of the industry was drastically reduced. This is also mirrored in the production of consumer electronics, formerly another important area of Ukrainian ICT industry. In 1990 Ukraine

produced about four million TV sets and one million radio sets, but by 1995 the numbers dropped to 315,000 and 125,000 respectively (Reed 1999).

The general negative trend of Ukraine's economy could only be halted by the turn of the century; ICT production recovered from its low levels of the mid-1990s (Reed 2005). In particular, Western Ukraine has attracted interest of foreign investors, such as *VW*, *Skoda* and *Leoni*. The region has a common border with Poland, Slovakia, Hungary and Romania and is known for its relatively high poverty and unemployment levels. Hence, key players in the ICT industry, including the EMS companies *Flextronics* and *Jabil*, decided to set up plants in the Transcarpathian SEZ. *Flextronics* set up a plant in Munkachevo, initially focusing on electronic components. *Jabil* has been producing mobile phones and computer equipment, including disk drives for *HP*, at its Uzhorod site for export since 2004 (Wilson 2007). Also, *Jabil* is a supplier to *Philips*, producing household appliances and electronic devices for the Ukrainian market (Evertiq 2009l). The latest entrant is the Hungarian EMS provider *Videoton*, which started producing in the Ukraine in mid-2009. The plant is specialized in producing cable parts for the automotive industry (main customer *VW*) and should employ around 500 workers at full capacity (Evertiq 2009a).

Some observers see the Ukraine as a future 'Mexico for Europe' – a low wage, industrial power horse in Europe's backyard that can compete with China and India (Emerson 2006). According to industry analysts, the Ukraine could in this division of labour ensure high-volume system assembly, but also produce components for final system integration in the Czech Republic, Hungary and Poland. For instance, *Flextronics* could produce at its Ukrainian site for *Dell* systems integration in Poland (Hannon 2006).

Russia: Future growth market?

Russia had been at the core of the military industrial complex within the Soviet system. The leading Russian firms, *Mikron* and *Angstrom*, both located in Zelenograd, were involved in the more sophisticated manufacturing of semi-conductors (Hill 1998). The industry strongly declined during the 1990s, as reflected by the fall of output from US\$ ten billion in 1990 to US\$ one billion in 1997 (Reed 1999). *Mikron* and *Angstrom* managed to survive by downsiz-

ing and addressing niche markets via alliances with Asian producers (Radosevic 2004b). Only since the early 2000s could a modest but bumpy recovery be observed (Reed 2005).

Russia's ICT industry has been eyed with caution by foreign investors. For instance, with regard to the computer industry, some planned investments in the second half of the 1990s had been stopped as the regulatory requirements, including taxation and duty-regime, were not favourable to exporters (Reed 1999). However, some TNCs such as the largest European EMS company, *Elcoteq*, and OBM, like *NEC* and *Lucent*, invested in plants in the second half of the 1990s (Reed 2003). In recent years, Asian OBMs have set up manufacturing plants in Russia to seize on the emerging opportunities in the Russian market, especially digital TV sets. Japanese *LG* opened a plant dedicated to consumer electronics in fall 2006 (LG 2006). In summer 2008 *Samsung* followed its competitor and launched production at its site, located in an Industrial Park close to Moscow, which is expected to turn out two million digital TV sets annually (Evertiq 2008f). Initially, these firms had either imported final products or subcontracted the assembly of their products to the emerging consumer electronics cluster in the Russian enclave Kaliningrad. The local firms located in the SEZ in Kaliningrad had an advantage over their competitors in mainland Russia as they could import electronic components duty free and were granted tax exemptions (Usanov 2008). However, the local firms have come under pressure as the government decided in September 2008 to eliminate tariffs for imported electronic components used for the assembly of LCD and plasma TVs in the whole country. Against this background, *Flextronics*, which has for some time considered investing in Russia, and *Jabil* announced the establishment of manufacturing sites for LCD production (Evertiq 2009r; Evertiq 2008g). Also, *Foxconn* and *HP* were reported to set up a joint plant for computer production in 2009 near Saint Petersburg. Despite these announcements, industry analysts are still cautious about the Russian potential, both as an export platform and as a new market (iSuppli 2009).

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List of Interviews

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Interview management 2009

Corporate Social Responsibility manager from an OBM (anonymous).
Interviewed on August 11, 2009.

Interview Sass 2009

Magdolna Sass, Institute for Economics of the Hungarian Academy of Sciences, Budapest.
Interviewed on July 6, 2009.

Interview Studnicna 2009

Lucie Studnicna, Czech Metalworkers' Federation (KOVO), Prague.
Interviewed on June 25, 2009.

Interview Szanyi 2009

Miklós Szanyi, Institute for World Economics of the Hungarian Academy of Sciences, Budapest.
Interviewed on July 6, 2009.

Interview Tarsoly 2009

Imrene Tarsoly, Hungarian Metalworkers' Federation (VASAS), Budapest.
Interviewed on July 7, 2009.

Interview trade unionist 2009 (Hungary)

Trade unionist (anonymous), ICT Plant, Hungary. Interviewed on July 8, 2009.

Interview trade unionist 2009 (Romania)

Trade unionist (anonymous), Romania. Interviewed in 2009.

Interview worker 2010

Worker (anonymous), Foxconn plant, Czech Republic. Interviewed on May 20, 2010.

Interviews workers 2008 and 2009

Ten workers were interviewed in 2008 and 2009. Six workers are female, four male, their age range from 19 to 40 years. With two exceptions they were all working as operators for Celestica Romania.

“Trapped” by Miloš Bárta

Published in the series *Czech Made?*

An exhibition of comics on migrant labour

The exhibition “Czech Made?”, which is concerned with the work of foreigners, was inspired by the reports of nine journalists who, together with photographers, researched the living conditions of foreign workers in different branches of the Czech economy during 2008.

The Multicultural Centre Prague has launched the project “Czech Made?” to raise public awareness about the exploitation of migrant workers in various sectors of the Czech economy. The label “Czech made” is commonly used to reassure consumers that products are of the highest quality. The question mark in the title of our project implies that apart from the quality of the products, there is also a difference in the quality of working conditions when comparing Czech to foreign labourer. Migrant workers are often denied fair working conditions and find themselves in situations where their fundamental human rights are violated in many sectors of the Czech economy. The aim of the project is to stimulate public debate that will in turn lead to the formation of a political strategy which would allow the country to satisfy its need for foreign workers without putting the human and social rights of labour migrants at risk.

For more information see the campaign website www.europeancity.cz/czechmade



HUNG (25). LIVES IN A SMALL VILLAGE IN NORTH VIETNAM. UNMARRIED, UNEMPLOYED.

I CAN'T SPEND THE REST OF MY LIFE HERE.

CUONG (32). VILLAGER. MARRIED WITH ONE CHILD. EARNS BARELY ENOUGH TO GET BY.

THEY SAY LIFE'S GOOD IN EUROPE.

I WANT TO START UP A BUSINESS THERE.

NAM (45). VILLAGER. MARRIED WITH TWO CHILDREN. HE STRUGGLES TO PROVIDE FOR THEM.

I'LL GO TO PRAGUE. I CAN MAKE GOOD MONEY THERE.

HI I'M LAI FROM PASCO AGENCY. WE CAN GET YOU VISAS, PLANE TICKETS, WORK PERMITS... EVERYTHING. ALL YOU HAVE TO DO IS SIGN A CONTRACT...

...AND PAY \$5000.

SORRY, I FORGOT... ANOTHER \$2000. SO WE CAN FIX YOU UP WITH A JOB.

WE'VE NO ONE LEFT TO BORROW FROM, CUONG.

I OWE MY WHOLE FAMILY MONEY...

IN THE END THEY ALL PAID THE AGENCY \$10,000 - DOUBLE THE SUM IN THE CONTRACT.

IT'S OK. TRAN GAVE ME A LOAN - INTEREST-FREE.

SOON, INSTEAD OF A ROSY FUTURE, ALL THEY WERE DREAMING OF WAS AN ENDLESS PROCESSION OF ELECTRONIC COMPONENTS...

THEN, JUST BEFORE THE END OF THEIR PROBATION PERIOD...

DON'T WORRY. IT'S PURELY ADMINISTRATIVE MATTER. YOU'LL BE RELOCATED AND GIVEN NEW CONTRACTS.

THE NEXT DAY THEY SIGNED NEW CONTRACTS AND STARTED A NEW PROBATION PERIOD. BUT A FEW DAYS LATER:

IT WAS WHAT THEY DREADED. WITHOUT JOBS, THEY WOULD SUDDENLY BECOME ILLEGAL IMMIGRANTS AND BE FACED WITH DEPORTATION, SINCE THEIR VISAS WERE CONDITIONAL ON THEIR BEING EMPLOYED.

I MUST STICK AT IT... FOR KIM AND GIANG'S SAKE.

THIS IS OUR LAST DAY HERE, BOYS.

WHAT? WE'VE BEEN FIRED?

IT'S FROM HIEN. HE SAYS THEY'RE CUTTING JOBS - AND OURS ARE LIKELY TO BE THE FIRST TO GO.

HOW AM I GOING TO PAY ALL MY DEBTS?

THEN LEAFLETS APPEARED ON ALL THE FACTORY NOTICE-BOARDS, SIGNED BY MR TIEN.

YES, THAT'S RIGHT. YOU CAN START AT ONCE.

THE CZECH WORKERS AT THCA WENT ON STRIKE FOR HIGHER WAGES. WHEN THE MANAGEMENT BEGAN FILLING THEIR PLACES WITH VIETNAMESE WHO WERE WILLING TO WORK FOR LESS, THE CZECH EMPLOYEES BACKED DOWN. THIS HARDLY MADE A FRIENDLY ATMOSPHERE ON THE SHOP FLOOR.

LINE FOUR AT COMP-AB NOW SEEMED LIKE A PICNIC COMPARED WITH THE DAILY GRIND AT THE CAR FACTORY. BUT AT LEAST IT WAS A JOB, WHICH MEANT THEY WOULDN'T LOSE THEIR VISAS.

THEIR DREAMS OF MAKING MONEY AND STARTING A NEW LIFE VANISH FOR EVER. BUT WITHOUT MONEY THEY CAN'T EVEN GET BACK TO VIETNAM, LET ALONE PAY OFF THEIR ENORMOUS DEBTS. THEY'RE TRAPPED.

EMPLOYMENT OFFER

TRÁŽBA PRACOVNÍKŮ ZÁŘADENÍM ABEMERLKA

SEEK WORKERS FOR THEIR PLANT IN KOLIN, STARTING IMMEDIATELY. FOR DETAILS CONTACT MR. TIEN.

DISKOTÉKA dnes od 20

FUCKING WOGS!

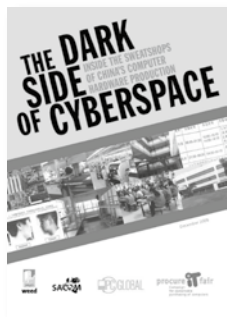


OTHER WEED PUBLICATIONS:

REPORT

The Dark Side of Cyberspace

Inside the Sweatshops of China's Hardware Production



The study that has been conducted by the Chinese labour rights organisation SACOM and is based on 45 interviews with employees of two suppliers of well-known computer companies. It paints an alarming picture of the working conditions in this industry. It reveals massive violations of labour rights in the cases of the investigated suppliers Compeq Technology (supplier of Dell, Lenovo) and Excelsior Electronics (supplier of Fujitsu Siemens Computers).

Authors: **Jenny Chan** and **Charles Ho** (SACOM) in co-operation with **WEED**
32 Pages, Berlin 2008
Price 2 EUR (1,50 EUR for WEED members)
ISBN 978-3-937383-61-3

GUIDELINE

'Buy it Fair'

Guideline for the sustainable procurement of computers



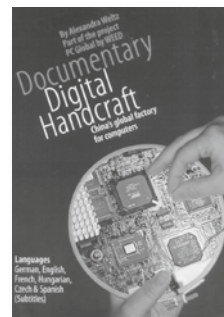
Public institutions have become a major customer of computer brand companies with a critical market share that can influence the sector's development towards social and ecological goals. This guideline helps to implement sustainable tenders of computers. It has a special focus on the working conditions in the supply chains of brand name IT companies.

Authors: **Florian Butollo**, **Johanna Kusch**, **Tine Laufer** (WEED)
42 Pages, Berlin 2009
Available online as PDF from www.procureITfair.org

MOVIES

Digital Handcraft

China's Global Factory for Computers (DVD)



The documentary shines the spotlight on some of the darker sides of the globalized production of computers and highlights this in contrast to the "clean" image of the industry. The living and working conditions of migrant workers in southern China are of specific interest. In addition, the film looks at the problems of electronic waste materials shipped illegally from Germany.

Production: **Alexandra Weltz** in co-operation with **WEED**
Duration: 28 Minutes, Berlin 2008
Price: 10 EUR (7 EUR for WEED members)
ISBN 978-3-937383-64-4



"Senor Pezzi buys Global!" (video clip)

The short animated video clip is the core element of the online petition "Buy IT Fair" against exploitation in the production of computer hardware. The petition is part of the European Campaign procureITfair. The clip tells the story of Senor Pezzi, a procurer at a university who as he wants to buy a cheap offer of computers is confronted with the bad working conditions under which these computers are produced in Shenzhen in China.

Production: **Julia Schnegg** (Kaiser Matthes), **Sarah Bormann** (WEED), **Marvin Clifford**, **Berni Mayer**
Duration: 4 Minutes, Berlin 2010
Available online at www.procureitfair.org/petition

Order from WEED:

www.weed-online.org, E-Mail: weed@weed-online.org

The ProcureITfair campaign and participating organisations

ProcureITfair – Campaign for sustainable purchasing of computers is a coalition of NGOs from various European countries that intend to raise awareness on the working conditions and environmental pollution in the production of computers and asks politicians and public purchasers to use their (buying) power to demand compliance with international labour rights and ecological standards in the global supply chain of computers.

www.procureitfair.org

WEED – World Economy, Ecology & Development was founded in 1990 and is an independent Non Governmental Organisation. Main topics of WEED's work are world trade, financial market and Corporate Accountability. Since 2005 the project PC global of WEED engages in the improvement of labour rights and environmental justice in the global supply chain of the computer industry. Since 2008 WEED coordinates the European campaign „Procure IT Fair“. WEED publishes researches and education material, organizes workshops, seminars and lectures and intervenes in political decision making processes

www.weed-online.org / www.pcglobal.org

SOMO – Centre for Research on Multinational Corporations, established in 1973, is a non-profit Dutch research and advisory bureau. SOMO investigates the consequences of Multinational Enterprises' (MNEs) policies and the internationalisation of business worldwide. SOMO's expertise lies in the field of international guidelines, treaties and codes of conduct for MNEs, and it conducts research on compliance with related norms. Focus is placed upon research on labour conditions in the global South and cooperation with local organisations and trade unions.

www.somo.nl

The Ecumenical Academy Prague (EAP) is an independent non-governmental non-profit organisation that is engaged in the field of adult education. The EAP organises seminars, conferences and workshops of issues in the field of culture, politics, church and society, social justice, sustainable development, North-South gap etc. In some cases the EAP also takes part in campaigning and lobbying or it undertakes research activities. The EAP started its work in 1995 and is a member of OIKOSNET, EURO-DAD, a founding member of NGDO's Czech Forum for Development Co-operation (FoRS), of Czech Association for Fair Trade and of the Czech Antipoverty Campaign.

www.ekumakad.cz

Südwind Agentur was founded in 1997 in Austria as a non-profit NGO engaged in PR, information and educational work in the field of international development. Südwind is committed to environmentally, economically, and socially sustainable development, and campaigns for a narrowing of the gap between North and South. Südwind works in the area of international development education, in the production of international development media, in the introduction of international development issues and concerns into civil society initiatives, and in the compilation of studies on global issues. The work also includes lobbying relevant political figures and decision-makers about their concerns.

www.suedwind-agentur.at

Find out more at:

www.procureitfair.org

www.pcglobal.org

www.weed-online.org



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