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CHALLENGING LABOUR – Working conditions in the electronics industry

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The growing importance and availability of electronics products has transformed the lives of people around the globe. According to estimates by the International Telecommunication Union (ITU), today one third of the world's population is using the Internet, the global penetration of mobile phone subscriptions has reached 87 % and 74 % of all households in developed countries and 25 % of households in developing countries own a computer (ITU 2011, 1-2). New information and communication technologies have the potential to connect people around the world, to facilitate communication and co-operation, to assist political protest and to foster participation as well as to alleviate work. However, at the same time the production of these electronics products often takes place under unacceptably burdensome conditions. This chapter aims to focus attention on the darker side of the electronics boom. It builds on the results of a number of empirical studies conducted by the European makeITfair project, which is presented below. In this chapter we provide insights into the working reality in the electronics manufacturing sector and points at specific challenges. Based on research results of the makeITfair project we argue that corporate self-regulation is unlikely to lead to sustainable improvements. By building a better understanding of the causes and effects of labour rights violations in the electronics production sector the project highlights the necessity for structural reforms. Fostering such long-term transformations requires raising awareness regarding labour rights, exposing corporate social irresponsibility, and increasing public pressure on corporations. This chapter makes an important contribution to that task.

In the following we will give an overview of market leading companies in the sector (section 1) and introduce the makeITfair project (section 2). In the next section we briefly describe some common characteristics of four major electronics production countries (section 3), before we provide more detailed evidence regarding several work-related problems in the electronics manufacturing sector (section 4). Finally, in the conclusion we point towards some starting points for improving the situation of workers (section 5).

1. Do electronics companies meet their social responsibilities?

The electronics industry is characterized by a great expansion. Consumers engage in ever increasing consumption of new electronic devices such as laptops, MP3 players, smart phones and iPads. The production and sale of electronic products is a profitable business sector. However, it is also very competitive and fast moving, where labels can win and lose market share rapidly. In 2011, five electronics companies were among the 100 biggest public companies in the world¹: Apple (ranked 22), Samsung Electronics (ranked 26), Hewlett Packard (ranked 67), Intel (ranked 85) and Cisco (ranked 91). As figure 1 shows, Apple has taken the lead. Between 2005 and 2011 Apple's annual profits grew by 62%.

¹ Forbes Magazine. 2012. The Biggest Public Companies. Retrieved from <http://www.forbes.com/global2000/list/> on April 25, 2012.

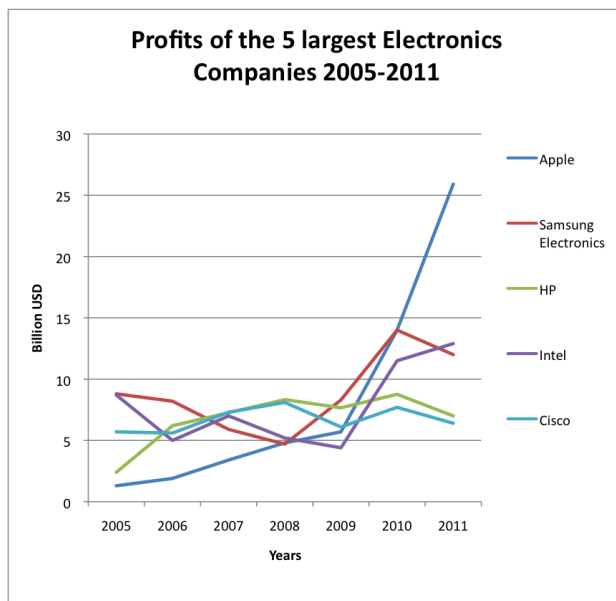


Figure 1: Profits of the 5 largest Electronics Companies 2005-2011 (Source: Apple 2005-2011; HP 2005-2011; Samsung 2005-2011; Intel 2005-2011; Cisco 2005-2011)

The major electronics companies acknowledge that the protection of labour rights in their supply chain is part of their corporate social responsibility (CSR). In their CSR communications they highlight that they are committed to protecting workers' rights in their supply chain. Apple, for example, in its latest "Supplier Responsibility Report" writes: "We require that our suppliers provide safe working conditions, treat workers with dignity and respect, and use environmentally responsible manufacturing processes wherever Apple products are made" (Apple 2012, 3). Similarly, HP makes a strong commitment to the protection of workers' rights in its supply chain: "As our supply chain develops, our priorities remain constant: to protect workers' rights and dignity, ensure strong health and safety standards, reduce environmental impacts, and uphold high standards of business ethics" (HP 2011). Cisco commits to "embedding sustainability into routine business practices at every stage of the value chain product lifecycle" (Cisco 2011, A6), while Samsung promises to "address the social issues throughout the supply chain". Likewise Intel highlights that it "is working to continuously improve transparency and promote corporate responsibility throughout the global electronics supply chain" (Intel 2010, 79). Through these public statements, the companies indicate that they are committed to socially and environmentally responsible practices in their supply chains.

However, CSR has often been criticised as being mainly a marketing tool that changes corporate rhetoric but does not affect actual business practices. Critics stress that CSR mystifies the negative effects of corporate operations and functions as a marketing strategy that does not challenge the imperative of profit maximization and leaves the core business model untouched (Sklair and Miller 2010, 492; Hanlon and Fleming 2009, 938; Boje 2008, 8, 19; Roberts 2003, 257; Hanlon 2008, 159; Shamir 2004, 684; Banerjee 2008, 64). These critics fear that CSR remains limited to a rhetorical strategy and "that all this talk of ethics is just that – talk" (Roberts 2003, 250). Sklair and Miller for example argue that CSR might be used as "a deliberate strategy to mystify and obscure the reality of capitalist globalization" (2010, 492). Similarly Hanlon and Fleming point out that CSR can function as "an ideological 'smoke screen' designed to either soften the image of firms engrossed in the rampant pursuit of profit [...] or a way to deflect attention away from an unsavoury core business model" (2009, 938). Boje describes CSR as a "shield to hide

unethical practice” (2008, 8). In order to hold companies accountable and review whether they comply with their strategies and goals, independent, critical counter-assessments are indispensable. As indicated above, large electronics companies publicly state their commitment to protecting workers’ rights in their supply chain. The makeITfair project looks behind these statements and monitors actual corporate practices, evaluating whether the discourse of CSR matches the reality.

2. MakeITfair: The need for independent monitoring

MakeITfair is a project funded by the European Union that aims to raise awareness about social and environmental consequences of the production and the disposal of consumer electronics.² Since 2007 the member organizations of makeITfair have documented working conditions and corporate behaviour throughout the manufacturing networks of IT companies. The manufacturing factories included in the research have been identified either by local partners or based on publicly available information.

MakeITfair has conducted original research about the situation of employees in the game console, mobile phone, computer parts and camera production industries in China, India, the Philippines and Vietnam:

The mobile phone, game console, and mobile music player production in China is the subject of *Playing with Labour Rights* (Finnwatch, SACOM and SOMO 2008)³. *Silenced to Deliver* (SOMO and Swedwatch 2008) summarizes the findings of a study conducted by SOMO and Swedwatch about working conditions in six mobile phone factories in China and the Philippines⁴. The situation in the Philippines was also the focus of SOMO’s study *Configuring Labour Rights* (2009), which examines working conditions in the production of computer parts⁵. In *Out of Focus* Swedwatch and SOMO (2011) describe the results of

² makeITfair is co-ordinated by the Dutch organisation SOMO (Centre for Research on Multinational Corporations). Project partners are Swedwatch and Fair Trade Center from Sweden, Finnwatch and Pro Ethical Trade Finland from Finland; DanWatch from Denmark, Germanwatch from Germany, Association of Conscious Consumers (ACC) from Hungary, ACIDH from the DR Congo, CIVIDEP from India, Workers Assistance Center (WAC) from the Philippines and Civil Society Research and Support Collective (CSRSC) from South Africa.

³ In 2008 Finnwatch, SACOM and SOMO investigated working conditions at four Chinese supplier factories of Apple, Microsoft, Motorola, Philips and Sony. The four factories under investigation were Celestica Technology, Flextronics International (incl. Vista Point Technologies/Multek), and Hong Fu Jin Precision’s Foxconn. For the initial study interviews with 110 workers were conducted between April and August 2008. In a follow-up study on *Game Console and Music Player Production in China* (Finnwatch, SACOM and SOMO 2011), 100 workers from the same factories were questioned between July and September 2010.

⁴ Those six factories are suppliers of the five largest mobile phone companies: Nokia, Samsung, Motorola, LG and Sony Ericson. For this report 102 workers were interviewed. The Hong-Kong based NGO Students and Scholars Against Corporate Misbehaviour (SACOM) conducted interviews with Chinese workers during 2007 and 2008. Interviews with workers from the Philippines were conducted by the Workers Assistance Center Inc in 2007.

⁵ For this report 106 workers from 12 factories were interviewed. This included eight factories in the Cavite Export Processing Zone (CEPZ) in Rosario, Cavite, two factories in Laguna Techno Park, one factory in Carmelray Industrial Park I- Special Economic Zone and one factory in First-Cavite Industrial Estate. In addition 12 NGOs and trade unions and six management representatives were interviewed.

their research on camera manufacturing in Vietnam⁶. *Phone Equality* (Finnwatch, Cividep and SOMO 2011) documents the findings of a recent study of mobile phone production in China⁷.

In the following we will present the main results of makeITfair's research by giving an overview of the situation regarding labour rights in four major electronics production countries: China, India, the Philippines and Vietnam.

3. Electronics manufacturing in China, India, the Philippines and Vietnam

The work situation in the electronics manufacturing sector in China, India, the Philippines, and Vietnam is similar in various respects. In this section we highlight its basic characteristics regarding workforce composition (section 3.1), the location of electronics factories (section 3.2), the formal protection of worker rights (section 3.3), as well the situation of labour unions in the electronics supply chain (section 3.4). These findings are based on research conducted by makeITfair between 2008 and 2011.

3.1 Labour force: Employees in the electronics sector

The workforce in the electronics manufacturing mostly consists of young, often female, workers who have left their homes in rural areas and migrated to towns and special economic zones in order to find work and be able to make a living. For example, the average age in the Indian mobile phone manufacturing industry is 22 years. As the labour supply exceeds the demand, factories require 10 years or more of school education. Thus, many employees are overqualified for the work they are doing. The workforce consists in large part of migrant workers, many of them female (Finnwatch, Cividep and SOMO 2011). Despite the fact that they are overqualified, many workers depend on their factory jobs in order to be able to support their families. Due to this economic necessity, often leaves workers no choice but to accept bad working conditions such as long hours of overtime work, low pay, or threats to health and safety.

A majority of female and migrant workers also characterize the workforce structure in electronics manufacturing in Vietnam. Statistics from the Vietnamese government show that in 2008, 90,746 workers were employed in the electronics sector and three out of four were female (GSO 2010). Most of these workers are furthermore migrant workers who live in rented rooms close to the factory (Swedwatch and SOMO 2011). The fact that many workers need to leave their hometowns and families in order to find work, means that they often are isolates and lack a social network, which makes them easier to control.

The situation in China is similar. Research conducted by SOMO and Swedwatch (2008) reveals that most workers in the mobile phone production in China are young, female migrants, who try to financially support their families in rural areas. The situation for

⁶ For this study, which was conducted in cooperation with the consulting group Global Standards and the Vietnamese NGO Center for Development and Integration (CDI), 84 workers from Olympus, Pentax, Samsung and Sanyo factories were interviewed.

⁷ Finnwatch, Cividep and SOMO studied factories of Nokia, Sakcomp, Flextronics and Foxconn, that are located in Sriperumbudur around Chennai, Tamil Nadu. Between February and May 2011 the local partner Cividep interviewed 100 workers at these four factories.

migrant workers is particularly difficult as they often are socially isolated. The separation of workers that have migrated from similar areas by assigning them to separate dormitories or assembly lines is a common management practice (SOMO and Swedwatch 2008, 11). Estimates show that in the Chinese Guangdong province, for example, 65 % of the workers in the manufacturing sector are migrant workers (Finnwatch, SACOM and SOMO 2009, 17). As employees tend to be young, many of them have no previous work experience. They therefore lack standards of comparison and have a low degree of awareness regarding their rights (Finnwatch, Cividep and SOMO 2011, 4).

The lack of experience, social networks, and awareness regarding their rights makes these workers vulnerable and obedient. Furthermore most workers are highly dependent on their work in order to be able to make a living and to support their families. Due to these dependencies workers are easily controllable and often forced to accept poor working conditions including low pay, forced overtime, and unsafe work practices.

3.2 Labour spaces: Special economic zones

Electronics production mostly takes place in so-called special economic zones (SEZ). Governments have installed such zones in order to attract foreign direct investment (FDI). Companies that are located in these areas benefit from tax reductions and sometimes less strict labour regulations. In China for example, SEZ were first established in 1980 (Yeung et al. 2009, 223). The first four SEZ were located in the coastal areas of south-east China: Shantou, Shenzhen and Zhuhai in Guangdong province and Xiamen in Fujian Province. In 1984 the entire Hainan province was added as a fifth SEZ (Yeung et al. 2009, 224). In addition to traditional SEZ, several further areas with special regulations exist today: among them are 69 economic trade and development zones (ETDZ), 54 high-tech industrial development zones (HIDZ), 15 free trade zones (FTZ), and 61 export processing zones (EPZ) (Zeng 2011, 10-12). The creation of special economic zones for attracting foreign companies through providing investment incentives is not unique to China.

Some of the oldest special economic zones are located in India, where so-called 'export processing zones' have existed since 1965. Companies located in these areas were required to achieve a certain minimum export performance. As a strategy to boost foreign investment, in 2000 the Indian government started an initiative to establish SEZ (Finnwatch, Cividep and SOMO 2011, 11). SEZ in India offer several benefits for companies such as duty free imports and duty free domestic procurement of goods for development, operation and maintenance for units within a SEZ, a 100 percent tax exemption on income from exports for the first five years and a 50 percent exemption for the next 5 years, exemption from minimum alternate tax, central tax sales and service tax, the possibility for external commercial borrowing up to 500 million USD⁸. Significant tax reductions are also common in other countries such as Vietnam and the Philippines.

In Vietnam the regular corporate income tax is 28 percent. Companies can be granted up to eight years of tax holidays starting from the first year in which profits are made, further tax reductions of between 5 and 10 percent after the end of tax holidays, as well as exemptions from value added tax (VAT) and duties for the import of certain goods

⁸ Ministry of Commerce & Industry. Special Economic Zones in India. Retrieved from <http://sezindia.nic.in/about-fi.asp> on March 28, 2012.

(Botman, Klemm and Baqir 2010, 168f). The regular corporate income tax in the Philippines is 35%. However, the Philippine Economic Zone Authority (PEZA) can grant substantial tax benefits to companies located in SEZ. Companies outside SEZ can apply to the Board of Investments (BOI) to receive similar benefits. Companies can, for example, receive between 3 and 8 years of tax holidays. After the end of tax holidays the PEZA can grant further exemptions from national and local taxes if companies instead pay a 5 percent tax on gross income. Furthermore, companies receive exemptions from taxes on imports of supply and machine parts (Botman, Klemm and Baqir 2010, 170-172).

These facts show that special economic zones in China, India, Vietnam and the Philippines provide incentives to encourage foreign investment into the country. This development strategy--luring foreign investors by offering special tax concessions in special economic zones--has been effective in developing manufacturing hubs in the special economic zones described above. However, working conditions in these manufacturing hubs are often harsh, creating a new set of problems for workers.

3.3 Labour rights: The ILO core conventions

While governments create new rules to provide financial incentives to multinational corporations, regulation to protect labour rights is often insufficient. A look at ratification figures for conventions of the International Labour Organization (ILO), for example, reveals that in several areas the commitment of governments to protect human rights is missing. Among the countries that are included in this overview, only the Philippines have ratified all eight ILO core conventions on fundamental human rights (see table 1).

		China	India	Philippines	Vietnam
Freedom of association and collective bargaining	C-87: Freedom of Association and Protection of the Right to Organise Convention	not ratified	not ratified	ratified	not ratified
	C-98: Right to Organise and Collective Bargaining	not ratified	not ratified	ratified	not ratified
Elimination of forced and compulsory labour	C-29: Forced Labour Convention	not ratified	ratified	ratified	Ratified
	C-105: Abolition of Forced Labour Convention	not ratified	ratified	ratified	not ratified
Elimination of discrimination in respect of employment and occupation	C-100: Equal Remuneration Convention	ratified	ratified	ratified	Ratified
	C-111: Discrimination	ratified	ratified	ratified	Ratified
Abolition of child labour	C-138: Minimum Age Convention	ratified	not ratified	ratified	Ratified
	C-182: Worst Forms of Child Labour Convention	ratified	not ratified	ratified	Ratified

Table 1: Ratification of ILO core conventions (Source: ILO⁹)

This overview shows that India has not yet made a commitment to abolish child labour. The Vietnamese and Chinese governments have until now not officially condemned forced labour. China, India and Vietnam have not ratified the conventions on freedom of association and collective bargaining. In states which have not ratified the core conventions, there is no legal obligation to uphold these basic labour rights. However, even in countries which have ratified all core conventions and which have laws in place to protect these rights, there is no guarantee that these will be upheld. Labour laws are routinely breached in many countries manufacturing electronics in Asia. At the very least, ratification provides tools that workers can use to hold governments accountable and sourcing companies cannot hide behind claims that they are “just following the national law”.

3.4 Labour associations: Unions in the electronics supply chain

Among the countries discussed in this chapter, only the Philippines have ratified the ILO core conventions on the right to unionize. According to the Philippine constitution all workers have the right to collective bargaining as well as peaceful and concerted activities, including strikes. Nevertheless, union activists often have to face police brutality

⁹ ILO (International Labour Organisation) 2012. Ratification of the Fundamental Human Rights Conventions by Country. Retrieved from <http://www.ilo.org/ilolex/english/docs/declworld.htm> on March 7, 2011.

and repression by factory management. Local unions have reported dismissals, intimidations, and killings of union activists (SOMO 2009, 26). Despite the ratification of the ILO conventions on freedom of association and collective bargaining and the existence of corresponding national laws, the International Trade Union Confederation reports that among all Asian countries the situation of union activists is “most deadly” in the Philippines.¹⁰

Similarly, the Indian constitution guarantees citizens the right to freedom of association, which includes forming and joining a labour union. Furthermore the Indian Trade Union Act prohibits discrimination against trade union members. However, employers are not legally obliged to recognize a union or to engage in collective bargaining (Finnwatch, Cividep, and SOMO 2011, 39, 41). Furthermore, the right to strike is limited in India. The Essential Services Maintenance Act (ESMA) allows governments to ban strikes in “essential services”, which are not clearly defined. According to the ESMA for Tamil Nadu, where the mobile phone companies that makeITfair studied are located, strike organizers as well as participants can be punished with three years imprisonment or fines. What is particularly problematic is that even the “refusal to work overtime” or to “continue work or to accept work assigned” as well as “any other conduct which is likely to result in, or results in, cessation or substantial retardation of work in any essential services” is prohibited (Finnwatch, Cividep, and SOMO 2011, 43). The case of India illustrates that even if laws to protect workers' rights exist, they are often not sufficiently implemented and enforced at the factory level.

In China and Vietnam the legal situation is different. In both countries only one official trade union exists. This means that workers do not have the right to free association. In China the All China Federation of Trade Unions (ACFTU) holds a monopolistic position. Investigations of four Chinese electronics supplier factories showed that workers either do not know about the existence of a union or think it would be loyal to the factory management (Finnwatch, SACOM and SOMO 2008, 8; Finnwatch, SACOM and SOMO 2011, 5). Therefore, organizing workers in China is particularly challenging since workers are unable to form independent trade unions to advocate on their behalf.

The Vietnam General Confederation of Labour (VGCL) is the only legal union in the country. Trade union elections are held at the factory level. However, many union representatives are managers and therefore loyal to management. In 75% of all union meetings factory managers are present. According to Vietnamese law holding a strike is only possible under highly restrictive conditions: strikes are only legal if they are related to legal worker rights (as codified in law) and not to workers' interests (Swedwatch and SOMO 2011, 14). This regulation makes it nearly impossible for workers to fight for an improvement of worker rights, without risking punishment.

A young, largely female, inexperienced, and highly dependent workforce; lax regulatory standards regarding the protection of worker rights; and poor union representation constitute the context in which electronic production takes place in China, India, the Philippines, and Vietnam. In the following section we will take a closer look at the situation of those workers who supply consumers all over the world with mobile phones, computers, mp3 players, game consoles, photo cameras and other electronic goods.

¹⁰ International Trade Union Confederation. 2011. Anti-union repression increases in Asia-Pacific. Retrieved from <http://www.ituc-csi.org/press-release-anti-union.html> on April 18, 2012.

4. Behind the gadget – work in the electronics production

In this section we give an overview of the most pressing problems regarding working conditions in the electronics supply chain: wages, working hours, precarious labour, discrimination, risks for occupational health and safety, low living standards, and threats to freedom of association and the right to collective bargaining. The evidence is based on research conducted by makeITfair between 2008 and 2011. All makeITfair research is based on interviews with workers, managers, trade union representatives and external experts. In order to ensure that employees dare to speak freely it is important that all interviews are confidential, held outside the factory area and without the presence of management.

4.1 Wages

A general problem throughout the electronics manufacturing sector in China, India, Vietnam, and the Philippines is the low wage level. Even if minimum wage standards are met, the wages workers receive for full time employment are often barely enough to allow workers to cover basic living expenses for themselves and their families. In other words, legal minimum wages are not adequate living wages.

In China, despite some recent increases in the official minimum wage level, employees in the electronics sector have to work hard to cover their basic living expenses. In 2010 minimum wages in all but one Chinese province increased on average by 24%. This was the first major increase since the national introduction of minimum wages in 2003. Despite these increases, minimum wages in China are still far from sufficient. Workers report huge gaps between their actual wages and what they consider necessary for a decent life (Finnwatch, SACOM and SOMO 2011, 10). The fact that electronics companies fail to ensure that workers in their supply chain receive adequate wages raises questions regarding the sincerity of their commitments to CSR.

A factory that received significant media attention in 2011 is the Shenzhen-based production facility of Hon Hai Precision Industry Co. (Ltd), better known under its trade name Foxconn. A series of suicides at the Foxconn production facility in Shenzhen, at which, for example, Apple's iPhone is produced, directed public attention to the working conditions at the electronics manufacturer. As a reaction to these events and the resulting media attention, Foxconn in June 2010 increased monthly wages from 900 Yuan to 1.200 Yuan (137 EUR). In October 2010 wages were further raised to 2.000 Yuan (229 EUR), but only for workers who had been working at the factory for more than six months. It therefore remains unclear how many workers actually benefited from the wage increase (Finnwatch, SACOM and SOMO 2011, 28). Workers who receive the basic wage of 1.200 Yuan reported having difficulties with covering their basic food and housing expenses.

Basic wages at other factories in the electronics sector are comparable to the wages at Foxconn. This includes Multak, another electronics manufacturer located in Shenzhen, which produces LCDs for Sony and mp3 players for Motorola, Phillips and other companies. It pays new hires a basic monthly wage of 1.100 Yuan (126 EUR). At a Flextronics production facility in Zhuhai city, which produces the Xbox game console for Microsoft, newly hired workers receive 1.100 Yuan (126 EUR). Microsoft's Xbox is also

produced in the Dongguan-based facility of Celestica. Basic monthly wages at the Celestica campus in 2010 were 1.080 Yuan (124 EUR). Workers can increase their basic wages by working overtime (Finnwatch, SACOM and SOMO 2011.) Table 2 gives an overview of minimum wages as well as actual basic and total wages at different electronic manufacturing facilities in China.

	Celestia Dongguan campus, Songshan Lake	Multec Henggang town, Longgang district, Shenzhen	Flextronics Xin Quing Science & Technology Industrial Park, Doumen, Zhuhai city	Hon Hai Precision Industry Co (Foxconn) Shenzhen
Main customers	Microsoft (until January 2010), IBM, Whirlpool, ZTE	Sony, Motorola, Phillips	Microsoft	Apple
Legal monthly minimum wage in the region	Dongguan: 920 Yuan	Shenzhen: 1,100 Yuan	Zuhai: 960 Yuan	Shenzhen: 1,100 Yuan
Basic monthly wage	1,080 Yuan (124 EUR)	Newly hired: 1,100 Yuan (126 EUR) After probation period: 1,298 Yuan (149 EUR)	Newly hired: 1,100 Yuan (126 EUR) After 3 months: 1.165 Yuen (133 EUR) After 18 months: 1,335 Yuan (153 EUR)	Newly hired: 1,200 Yuan (137 EUR) After 6 months: 2,000 Yuan (229 EUR)
Total monthly wage (including overtime, food and housing allowances, shifts subsidies)	Average: 1,800–2,500 Yuen (206 to 286 EUR)	Average during peak season: 1,900–2,100 Yuan (217–240 EUR) Average during low season: 1,300–1,400 Yuan (149–160 EUR)	Average 2,000–2,500 Yuan during peak season (229–286 EUR)	At maximum during peak season: 3,000–4,400 Yuan (340-500 EUR)

Table 2: Wages in the Chinese electronics manufacturing, Source: Finnwatch, SACOM and SOMO 2011

The situation in the Philippines is similar. In 2008 SOMO's study of computer parts manufacturing in the Philippines revealed that legal minimum wages were too low. Even if both parents worked, minimum wages were not enough to cover basic living expenses of a family (SOMO 2009, 24f). Another study conducted by SOMO and Swedwatch

showed similar results. For example, in May 2008 the minimum wage in one main export processing zone in the Philippines was 120 EUR, while the basic living costs for an average family in this region were 320 EUR (SOMO and Swedwatch 2008, 8). Legal minimum wages that are below the living wage help attracting foreign direct investment. This is however highly problematic as low legal minimum wages provide companies with an excuse for not paying their employees living wages.

Likewise, research into camera producers in Vietnam showed no violations of minimum wage laws, however due to high inflation rates it is becoming increasingly difficult for workers to save money or sometimes to cover living expenses. From the four supplier factories that were included in this study, workers from two factories reported that their wages were not enough to cover their living expenses (Sanyo DI Solutions Co. Ltd. and Samsung Electronics), while in the other two factories workers confirmed that wages cover their basic needs (Olympus Vietnam Co. Ltd. and Pentax Vietnam) (Swedwatch and SOMO 2011, 40). Similar issues were also found in India. Recent research conducted by Finnwatch, Cividep and SOMO (2011) shows that wages in mobile phone production, despite complying with legal minimum wages, are far too low. In 2011 wages in Indian factories of Nokia, Flextronics, Foxconn and Salcomp were between Rs 4,130 and 5,500 (66-88 EUR), which is around half of what workers themselves considered a decent living wage, that would allow them to rent a room and to start a family (Finnwatch, Cividep and SOMO 2011, 5). The fact that electronics companies fail to ensure adequate wages in their supply chain reveals that they, despite commitments to CSR, do not meet their responsibility towards those workers that produce their products. The labour of these workers is the source of the profits of electronics companies. However, workers themselves only receive a minimal share of the wealth they are creating, while most of this wealth is turned into private profit of company owners.

Research conducted by makeITfair shows that even when electronics manufacturers in China, the Philippines, Vietnam and India comply with minimum wage regulations, these wages are insufficient. Minimum wages in these countries are far from enough to allow workers and their families to live a decent life. This makes it particularly difficult for workers and activists to campaign for higher wages when simply adhering to minimum wages is insufficient to provide for decent living standards for workers and their families. On the one hand increasing minimum wages thus seems crucial. On the other hand, it is important to raise public awareness regarding the problem of low wages and to pressure companies to pay living wages. Furthermore manufacturing countries are competing with each other and often struggle with the fear that western companies relocate their production to another country if minimum wages are raised. Electronics companies thus should be considered responsible for ensuring adequate wage levels. A living wage should cover expenses for food, housing, clothes, education, social security and health care for a family, and allow for some savings. The Asia Floor Wage Campaign (2009) suggested a method for calculating the living wage. According to this calculation a living wage needs to cover the costs for food, equivalent of 3000 calories per adult family member multiplied by two, in order to cover also other basic need such as clothing, housing, education, healthcare, and savings. The living wage should provide for a family of two adults and two children. It thus should cover the cost for food worth 3000 calories for three consumption units (two adults and two children) multiplied by two. It is thus calculated as follows: price for food worth 3000 calories x 3 x 2 (Asia Floor Wage Campaign 2009, 50). A worker should be able to earn a living wage within a working week of a maximum of 48 hours. This calculation of a living wage was developed with

specific regard to the garment sector, but is also be applicable for other sectors such as electronics manufacturing.

Since it is evidently very difficult for workers to challenge the minimum wages structures in all countries, it is important with awareness raising from consumers and NGO-movements such as Asia Floor wage campaign, which can help to put pressure on companies to affect the low wages.

4.2 Working hours

Connected to the problem of low wages is the issue of excessive overtime. For many workers overtime is the only possibility for increasing their otherwise low wages. Furthermore workers often feel that they cannot refuse overtime either because overtime is compulsory or because they fear not being given any additional shifts in the future if they refuse to work overtime once. Excessive overtime of between 80 and 120 hours a month is not uncommon in the electronics manufacturing sector.

In 2008, in an investigation of four Chinese electronics suppliers, makeITfair found that in three of four studied factories (Flextronics, Celestica, and Multec) 80 to 90 hours of monthly overtime were common during peak season. In the fourth factory (Foxconn), monthly overtime amounted to up to 120 hours (Finnwatch, SACOM and SOMO 2008, 7). A follow-up study in 2010 showed that after the tragic suicides in 2010 overtime at Foxconn was reduced. However, although workers were granted one day off per week, they were still working 75 to 80 hours overtime per month. The study again revealed overtime of up to 120 hours per month in one factory, this time at the factory of Celestia at Dongguan campus. Overtime between 60 and 100 hours a month was also found at Flextronics in Zhuhai city and Multec in Shenzhen (Finnwatch, SACOM and SOMO 2008, 7). In another study SOMO and Swedwatch found that in one Chinese factory that supplies chargers for Nokia, Samsung, Motorola and LG, 80 hour working weeks were common (SOMO and Swedwatch 2008, 9). These practices violate Chinese labour law, which permits overtime of 36 hours per month at most (Finnwatch, SACOM and SOMO 2008, 7). The situation of excessive overtime is not unique to China.

Similar conditions exist in the Philippines. Workers who are producing for Motorola and LG reported working weeks of more than 60 hours and having to continuously work 25 days of day shifts followed by 25 days of night shifts (Swedwatch and SOMO 2008, 9). Likewise, an investigation of eight factories in the Philippines in which computer parts are manufactured showed that usual working times were 12 hours per day for six days a week and even seven days a week during peak seasons. Workers were scared that refusing overtime would have negative consequences (SOMO 2009, 26). This shows that also in regard to working hours electronics companies fail to meet their social responsibility.

Workers are also heavily affected by up- and downturns in demand: excessive overtime during peak season results in exhaustion, while low demand and little overtime during the low season leads to reduced wages which makes it difficult for many workers to cover their living expenses. Even if overtime is officially labelled voluntary, low wages often force workers into working excessive overtime. While companies comply with legal minimum wage standards, compliance with regulations for maximum working hours is

often insufficient. The fact that minimum wage levels are too low makes compliance relatively easy for companies and at the same time creates the need for workers to work overtime to earn extra money. The research conducted by makeITfair over the last couple of years shows no clear improvement regarding the issue of overtime. The relation between low wages and high overtime rates is a basic structural characteristic of contemporary electronics manufacturing. It allows companies to keep their payroll low at the expense of workers, and at the same time meet high production targets.

4.3 Precarious labour

Despite low wages and long working hours, employees in the electronics manufacturing sector often have to face precarious and insecure working conditions. In the Indian mobile phone manufacturing sectors, for example, the workforce is split into two types of employees: permanent employees and contract workers. At the four factories that were investigated by Finnwatch, Cividep, and SOMO (2011), the percentage of contract workers ranged between 10 and 60 %. Contract workers receive fewer security benefits as well as lower wages, and their possibilities for career advancement are fewer (Finnwatch, Cividep and SOMO 2011, 5). In three of the four Indian mobile phone factories studied most workers start as trainees. Workers keep the status of trainees for 15 to 18 months, although the actual training period does not last longer than one month. At the end of the training period, workers have no right to claim a permanent employment contract. Apart from the insecurity contract workers and trainees are facing, they often receive significantly lower wages than permanent employees (Finnwatch, Cividep and SOMO 2011, 30). High job insecurity puts worker under pressure as their contracts can be discontinued at any time. Different types of contracts within one factory also creates divisions between workers, which hampers the joint struggle against bad working conditions that to different degrees affect all of them.

Swedwatch's and SOMO's (2011) latest research into camera production in Vietnam confirms that job insecurity is a major problem in electronics manufacturing. At a Pentax factory in Vietnam workers who were interviewed only had one-year contracts although they had been working in this factory for six years already. Similarly, at the Olympus factory studied, workers complained about job insecurity. They reported that the company published lists with names of workers whose contracts will be renewed just one week before the old contracts expired. The decision about whether contracts are renewed or not depended on the workers' performance and attitude (Swedwatch and SOMO 2011, 36).

Also in the Philippines another makeITfair partner, SOMO (2009), found a trend towards "contractualisation" of workers in the electronics industry. Many workers receive only six-month contracts either directly from the electronics company or from work agencies. This type of employment not only reduces job security but also workers' rights and benefits such as paid vacations, paid sick leave and wage bonuses (SOMO 2009, 30). A practice that is particularly common at Chinese electronics supplier factories is the employment of student interns. Students are cheap labour since they do not receive regular social security benefits. They however have to work night shifts and overtime like regular workers. In 2008 makeITfair researchers found this practice at all four Chinese electronics manufacturers studied. Large numbers of 16- to 18-year old students were employed for up to one year. Reductions in labour costs can also be achieved through

hiring contract or dispatch labour. In one factory producing for Microsoft 20%, and in another factory even 50% of the total workforce consisted of this kind of cheap labour (Finnwatch, SACOM and SOMO 2008, 7). A follow up study in 2010 showed that while one company significantly reduced the amount of student labour, other factories, such as Foxconn, still employed large numbers of 16- to 18-year old students for periods of three to six months (Finnwatch, SACOM and SOMO 2011, 5).

The practice of giving workers only short-term contracts makes long-term life planning difficult. Contract workers are not only suffering from the fear of losing their job, but often also receive lower wages and fewer security benefits. Furthermore, this practise increases factory management's power over workers. Threatening workers with the refusal to renew a contract can be used as an instrument for controlling workers' behaviour, such as forcing them to meet higher production targets or to work overtime. Short notice times furthermore give workers hardly any chance to rearrange their lives and to find new employment if their contracts are not renewed.

4.4 Discrimination

Discriminatory recruiting practices occur throughout the electronics manufacturing sector. Often, job applicants need to undergo medical check-ups during the hiring process. For female applicants pregnancy tests are common. A 2008 makeITfair study of four electronics supplier factories in China, for example, showed that medical checks were used at all four investigated factories. Applicants had to pay for the check-ups themselves, regardless of whether they were employed or not. Hepatitis B was a reason for rejection in three out of four investigated companies (Finnwatch, SACOM and SOMO 2008, 7). In a 2010 follow-up report Finnwatch, SACOM and SOMO found that discrimination on Hepatitis B decreased (Finnwatch, SACOM and SOMO 2011, 4). This could partly be due to the public criticism makeITfair and others raised in investigation reports (see for example Finnwatch, SACOM and SOMO 2008, 7).

Apart from discrimination due to illness, gender discrimination is common in many electronics factories. A study by Swedwatch and SOMO (2011) on camera production in Vietnam revealed structural discrimination against female workers at an Olympus factory. Interviewees reported that female workers would initially receive only a six-month contract. After this six month period they would receive a one-year contract while male workers would receive a one-year contract after just one month of training. Workers furthermore reported that pregnancy was used as a reason for not renewing contracts (Swedwatch and SOMO 2011, 30). In general, women are often preferred as employees. This can be seen in the hiring ads for the Vietnamese Olympus factory, which explicitly target women between 18 and 35 years of age. Only hiring young workers constitutes a form of age discrimination (Swedwatch and SOMO 2011, 33).

Gendered hiring practices also prevail in China. Many workers in the electronics industry are young women. In China they often leave their families in the countryside to find work in an industrial area and provide some financial assistance for their relatives. Often factories prefer to hire female workers because they are considered to be good at performing detail-oriented work and to be more obedient and less likely to engage in protests (Swedwatch and SOMO 2008, 11). These gendered stereotypes make it easier for women to be hired, but their positions are often precarious in the factories. In the

Philippines for example wages for women in the electronics industry are often higher and jobs there guarantee more social security than jobs in the informal sector. However women are still suffering from poor working conditions and often endangered by sexual harassment and violence (Swedwatch and SOMO 2008, 11).

4.5 Risks for occupational health and safety

Various occupational health and safety risks are common in the electronics manufacturing sector. The problems are partly related to generally exhausting working conditions due to long hours of standing and shift work. Workers in many cases also have to work in dangerous environments and are exposed to toxic chemicals, often without proper safety equipment.

One basic problem for many workers is the exhaustive and repetitive work at the assembly line. Often workers have to meet high production targets and therefore feel stressed due to the fast work pace. Most often workers also have to stand for their whole shifts, which many of them consider to be very exhausting (Swedwatch and SOMO 2008, 33). An investigation of the working conditions in Chinese electronics supplier factories in 2008, for example, revealed that workers were suffering from having to stand during entire shifts of 11 hours, exhausting month-long night shifts and long queues to use the toilet (Finnwatch, SACOM and SOMO 2008, 6). A 2010 follow-up study showed that these problems had basically not improved (Finnwatch, SACOM and SOMO 2011, 5).

Similar issues were found in Vietnam. Workers at a Vietnamese Olympus factory, for example, complained about exhaustion due to many hours of standing during work and restrictions in using the toilet (Swedwatch and SOMO 2011, 29). Likewise workers in the Indian mobile phone production considered long standing hours combined with a high working tempo as problematic (Finnwatch, Cividep and SOMO 2011).

Apart from being stressful, repetitive, and exhaustive, work in the electronics manufacturing often brings about serious safety risks. As the production of electronics is chemical intensive, workers risk being exposed to hazardous toxic substances and fumes (Finnwatch, SACOM and SOMO 2009, 18). In many factories health and safety training as well as protection equipment are insufficient. In 2008, in an investigation of a Chinese manufacturer for printed circuit boards for mobile phone companies Nokia, Samsung, Motorola and LG, makeITfair found that employees in the departments for painting, spraying, panel cleaning and oxidizing were not provided with chemical-resistant gloves and therefore suffered from itches and pain. Swedwatch's and SOMO's investigation into mobile phone manufacturing in China and the Philippines also shows that workers in both countries were suffering from health issues such as muscle strains, eye problems, allergies, dizziness, exhaustion, burn injuries, cutting, chest pains and weight loss and were concerned about bad ventilation and the fear of getting seriously ill due to the exposure to chemicals (Swedwatch and SOMO 2008, 10, 33). Often workers do not even know which chemicals they are exposed to at their workplace. Workers interviewed for a recent makeITfair report on the Chinese electronics manufacturing sector complained about insufficient knowledge about health risks associated with the use of certain chemicals (Finnwatch, SACOM and SOMO 2011, 5).

Similarly, workers in digital camera factories in Vietnam report the use of unknown chemicals during their work. At Samsung Electronics Vietnam Co. Ltd (SEV) and Sanyo DI Solutions Co. Ltd workers were concerned because of the strong chemical smell and bad air quality but did not know which chemicals exactly were in use (Swedwatch and SOMO 2011, 30). Chinese workers furthermore reported that even if protection equipment is provided, it often is not used. Tight schedules and high production targets require workers to work as quickly as possible. Workers are afraid that they will be slowed down and unable to meet their production targets if they use protection equipment such as gloves (Swedwatch and SOMO 2008, 33).

The combination of a risky work environment and a lack of training and safety equipment regularly results in serious accidents: between July 2009 and early 2010, 47 workers at United Win in Suzhou, China, a subsidiary of Wintek Corporation that produces Apple products, were hospitalized because of being poisoned with n-hexane (SACOM 2010, 2). Eighty-five (85) cases of industrial injury were reported between August 2009 and July 2010 at the Flextronics campus in Zhuhai (Finnwatch, SACOM and SOMO 2011, 22). In 2010 a female worker at an Indian Nokia factory got stuck in a machine and died while attempting to remove a jammed piece (Finnwatch, Cividep and SOMO 2011). In July 2010 a pesticide incident occurred at a Foxconn campus in Sriperumbudur, India. A pesticide that was used on the factory campus got into the factory's faulty ventilation system and caused symptoms like fainting, breathlessness and coughing for 200 workers (Finnwatch, Cividep and SOMO 2011). In May 2011 three workers were killed in an explosion at the polishing department at a Foxconn factory in Chengdu, China (SACOM 2011b, 1).

In addition to these serious threats to the physical health of workers, mental health problems also occur. Sometimes workers suffer from psychological problems due to social isolation. Many workers left their families in the countryside to find work in special economic zones. An investigation after the culmination of suicide tragedies at the Foxconn campus in Shenzhen revealed that workers who are working in the same shifts or who have migrated from the same region are often assigned different dormitory rooms. As they are also not allowed to talk to each other during work, it is difficult for them to establish social contacts (Finnwatch, SACOM and SOMO 2011, 30; earlier research found similar results, see: SOMO and Swedwatch 2008). These results show that in many factories meeting high production targets is more important than the health of workers. Furthermore the inhumane working environment in many factories ignores the human need for social contacts and reduces workers to appendices of the machines they are operating.

4.6 Disciplinary measures

Another common strategy in many electronics factories is to control the behaviour of workers through various disciplinary measures. In some factories fines and wage deductions are used as punitive measures. In a study of Chinese electronics suppliers, makeITfair found that in three out of the four studied factories workers were punished with wage reductions if they made mistakes or fell asleep during work (Finnwatch, SACOM and SOMO 2008, 8). A follow up investigation in 2010 showed that strict disciplinary measures remained in place. For example at Celestica's Dongguan-based production facility workers had to pay a fee for falling asleep during work or making

mistakes. They were also fined if they could not keep to the monthly tolerance of 30 minutes for arriving late to work or leaving early (around one minute per day). Flextronics abolished fines and wage deduction as disciplinary measures but a strict discipline system remained in place. If workers violate the company's rules they receive "points". A regular worker who receives six points will be fired, while for workers who are on probation two points are enough to be fired (Finnwatch, SACOM, and SOMO 2011).

The practice of using fines and wage reduction to punish workers who make mistakes or fall asleep was also found in all of the studied supplier factories of leading international mobile phone companies. In a factory producing for Nokia, Motorola, Samsung and LG investigators found that workers were fined if they fell asleep although they had to work 12 to 13 hour shifts six days a week (SOMO and Swedwatch 2008, 9).

Workers in the Indian mobile phone production sector reported that having to clean the shopfloor in front of colleagues was used as a punitive measure for not meeting production targets (Finnwatch, Cividep, and SOMO 2011, 37). Such humiliating measures demonstrate the power the factory management has over workers and the often inhuman working conditions.

4.7 Low living standards

Many workers migrate from the countryside to find work in electronics factories in the hope of securing decent living conditions for themselves and their families. In reality, however, the living standards of most workers in the electronics manufacturing industry are low. As discussed earlier, wages are low and working hours are long. Most workers need to financially support their families in the countryside. In order to be able to send part of their wages home to their families they try to keep their own living expenses as low as possible. In China workers often live in dormitories inside factory campuses because those are cheaper than other accommodation. Often the rooms are small and shared by many workers, which mean there is very little privacy. Sometimes hygiene problems exist in dormitories because workers themselves are responsible for housekeeping, but have little time and energy for cleaning due to long working hours (Finnwatch, SACOM and SOMO 2008, 8).

The Vietnamese factories of Samsung, Olympus and Pentax provide cheap shared dormitory rooms. Workers at Samsung reported that they prefer to live in the nearby village rather than in factory dormitories, because they want to avoid strict dormitory rules such as regulated bus times for going to the factory, strict meal times and having to report in. As housing in the village is more expensive, typically three workers share each room (Swedwatch and SOMO 2011, 41).

In India workers often chose to live in the countryside, where living expenses are lower. In order to save costs five to seven workers commonly share one room. MakeITfair investigators visited one room that was shared by 25 women who were sleeping on the floor without furniture. Living in the countryside results in long commuting times. Most workers travel between two and four hours each day. The average travel time to the home of their parents was four hours. As workers can only take limited leave, occasions to visit their families are rare and their stays short (Finnwatch, Cividep and SOMO 2011, 20). These results show that also in their free time it is hard for workers to find relief from

work. Many of them spend their limited free time in small shared dormitory rooms, or commuting to visit their families and to escape the social isolation of small and shared dormitory rooms.

4.8 Freedom of association and the right to collective bargaining

MakeITfair research found that workers' rights to unionize and collective bargaining are limited in the Philippines, Vietnam, China, and India. Despite the fact that the Philippines have signed the ILO core conventions on labour unions, Philippine workers often fear joining a union due to the threat of losing their employment as well as violent repression. In 2008 only three to five percent of the Philippine labour force was organized. Especially in export processing zones, in which most large electronics factories are located, "no-union, no-strike" practices are common. Workers know that participating in union activism can be dangerous. Interviewed workers reported dismissals of union members and reported that factory management would not allow workers to organize. They furthermore reported that during the application process they were questioned about their knowledge about and sympathy for unions. Workers at Fujitsu reported that if applicants said that they would like to join a union they were not hired (SOMO 2009, 28).

As in the Philippines, in India workers officially have the right to free association. However, in practice several obstacles exist that hamper union activities. Employers follow different strategies for preventing workers from joining unions, such as filing false criminal charges against union members, undesirable transfers, violence, threats, or even murder of union activists (Finnwatch, Cividep, and SOMO 2011, 39). In India the workforce in electronics manufacturing is divided into regular employees and contract workers. This situation weakens the collective power of workers. Contract workers fear losing their jobs and therefore do not want to join a union (Finnwatch, Cividep, and SOMO 2011). MakeITfair has studied the union situation at Indian mobile phone factories and found that after worker strikes at the Chennai Nokia and Foxconn factory campuses in 2009 and 2010, unions were introduced. Nokia recognized the Labour Progressive Federation (LPF) as a trade union. However, after a while an independent union, the Nokia Employees Union, was formed. As this union is not connected to any larger union or political party its strength is limited to the Nokia workers that join the union (Finnwatch, Cividep and SOMO 2011, 40). In April 2010, Foxconn also recognized the LFP as a trade union at the factory. A three-year wage agreement was achieved between the union and Foxconn. However, workers were not satisfied with the union's activity, which was affiliated to the then-ruling party Dravida Munnetra Kazhagam, and therefore instead joined the Centre of Indian Trade Unions (CITU), which is connected to the Communist Party of India. In October 2010, 200 workers were arrested when participating in a strike for higher wages and recognition of CITU (Finnwatch, Cividep and SOMO 2011, 42). Limitations to the right to free association are not specific to the Philippines but are also common in other electronics production countries.

In China and Vietnam, union activity is also restricted. MakeITfair investigations of four Chinese electronics manufacturers in 2009 and 2011 revealed that most workers were not aware of the existence of unions. Workers at Celestica in Dongguan, Flextronics at Zhuhai industrial park as well as at Foxconn's Shenzhen-based production facility were not aware of the existence of a union. Only at Vista Point Technologies did workers know that a union exists, but reported that it would favour management interests (Finnwatch,

SACOM, SOMO 2009 & 2011). Limitations of the right to free association are also common in Vietnam. Swedwatch and SOMO conducted an investigation of four digital camera factories in Vietnam and found that freedom of association is not guaranteed and that opportunities for collective bargaining and complaint systems are missing. In three out of four factories unions were only organizing social events: protecting workers' rights was not part of their agenda. One factory, Samsung, even refused to install a labour union until May 2011, even though Vietnamese labour law requires it (Swedwatch and SOMO 2011, 37). Workers at Sanyo DI Solutions Co. Ltd reported that they achieved a wage raise through a sit-down strike in January 2011, but at the same time criticised union representatives taking sides with management. Workers participating in the strike feared repression from management or the police. Workers at Pentax VN in Vietnam argued that union representatives are loyal to factory management and complained that they are only concerned with social events instead of protecting worker rights (Swedwatch and SOMO 2011, 38). Electronics companies claim to be socially responsible, however fail to ensure conditions that allow workers to associate freely and to establish adequate forms of worker representation.

Despite different official legislation regarding the right to unionize and to collective bargaining, makeITfair research shows that these rights are limited in all four countries. Often freedom of association, the right to collective bargaining as well as the right to strike and protest are limited. In China and Vietnam only one official trade union exists, which does not allow workers to form independent unions. In both countries workers often are not aware of the existence of unions or are not satisfied with the union's activities and criticise their loyalty to management. In the Philippines workers fear violence and repression and therefore do not dare to join a union. In India, factory management often deters workers from forming or joining a union. Adequate complaint systems are missing in the electronics factories in all four countries. This situation makes it difficult for workers to collectively fight for the protection of their rights and improve their working conditions.

5. Conclusions

While workers in the electronics sector manufacture products that represent progress, prosperity, and a modern lifestyle, electronics companies continue to fail to respect human rights in their supply chain. For most workers even the most basic work qualities – such as wages that cover their basic needs and working hours that allow for a minimum amount of free time – are not guaranteed. This is a contradiction that reveals a separation between workers and the fruits of their labour. In one recent investigation at Foxconn's Chengdu production line for the iPhone, a worker told SACOM: *"Though we produce for iPhone, I haven't got a chance to use [an] iPhone. I believe it is fascinating and has lots of function. However, I don't think I can own one by myself"* (Worker quoted in SACOM 2011a, 19).

Improving the situation of workers requires structural changes. Today, workers have to meet high production targets while receiving low wages. Market driven capitalism promotes low cost products and high profit margins. At the same time international norms on corporate social responsibility demand respect for human rights. This implies cost, investment, dialogue, sustainable sourcing and shared value. For example, according to Forbes Magazine, in 2011 Apple was the second most profitable company in the world,

only superseded by the oil corporation Exxon Mobil¹¹. As long as companies are not willing to accept higher production costs, doubts need to be raised about the sincerity of Apple's and other companies' commitments to the protection of labour rights in the supply chain.

An important starting point for improving working conditions in the electronics sector is empowering workers. Assisting workers in their own struggle for an improvement of their working conditions is essential. This, first and foremost, requires the protection of the freedom of association and the right to collective bargaining. Unions have the important role of informing workers about their rights and to organize collective actions. Today, in many electronics production countries, union are not allowed to operate freely and union activists often face repression, which makes it difficult for them to adequately inform, represent and protect workers.

MakeITfair's research revealed that in many cases workers were not even aware that the companies they were producing for had a code of conduct that is supposed to protect their rights. However, as long as workers have to fear being punished for engaging in union activities and in protest actions the impact of unions will be limited.

Secondly it is of outmost importance to raise public awareness in order to gain support for the struggle of workers regarding their situation. Mobile phones, photo cameras, mp3 players and computers are omnipresent in the lives of most people in developed countries. Often the miserable conditions under which these products were produced are not visible. Informing the public about the situation of workers in the electronics supply chain also requires independent research that monitors the actions of electronics companies and documents corporate wrongdoing. Creating public awareness about this issue is important for increasing pressure on companies and states. This is one of the main goals of makeITfair. One of makeITfair's awareness raising campaigns was called "Time to Bite into a Fair Apple" which culminated in a global action day on May 7, 2011.¹² Another example for successful awareness raising was that Change.org and SumOfUs.org collected almost 400,000 signatures between January and May 2012 in order to protest against labour rights violations in Apple's supply chain.¹³ In January 2012 Apple responded to increased public pressure by being the first electronics company to publish a list of suppliers and join the Fair Labour Association. While these steps signal that Apple is concerned about its reputation, they do not guarantee an actual improvement of the situation of workers. Nevertheless, these actions are important for companies to know that the public is watching and that their sourcing practices are under scrutiny. After all, their profits are connected to their public image, particularly for electronics companies like Apple that rely heavily on promoting a certain image of the company in order to sell their products. With all of these campaigns, ongoing independent

¹¹ Forbes Magazine. 2012. The Biggest Public Companies. Retrieved from <http://www.forbes.com/global2000/list/> on April 25, 2012.

¹² MakeITfair Campaign. Time to Bite Into a Fair Apple. Retrieved from <http://makeitfair.org/en/take-action/fair-apple> on May 16, 2011.

¹³ Until May 16, 2011 Change.org collected 256,425 signatures for its petition "Protect Workers Making iPhones in Chinese Factories". Retrieved from <http://www.change.org/petitions/apple-protect-workers-making-iphones-in-chinese-factories-3> on May 16, 2011. SumOfUs.org collected 137,986 signatures for its petition "Apple: Make the iPhone 5 ethically". Retrieved from <http://sumofus.org/campaigns/ethical-iphone/> on May 16, 2011.

monitoring is crucial to ensure that companies are adhering to local and international labour standards and their own stated codes of conduct.

Another conclusion is that it is necessary to strengthen legal frameworks for the protection of worker rights; legal mechanisms are a necessary element for fostering the protection of worker rights. The need for action exists both in regard to improving as well as enforcing existing legal standards. With regard to minimum wage regulation, for example, the major problem is that legal minimum wages are too low and do not allow workers to cover their basic needs. On the contrary, in regard to maximum working hours, regulations exist – such as a maximum of 36 hours overtime per month in China – but their enforcement is inadequate. Especially with regard to the most severe issues such as child labour and forced labour, companies need to be held legally responsible for their wrongdoings.

The makeITfair campaign has been working with its partners between 2007 and 2012 to address these concerns by networking between Asian and European civil society groups, through disseminating information to consumers and by having a dialogue with and about the electronics industry worldwide.¹⁴ Out of this work, as well as the work of trade unions and consumer groups, and because of increasing media attention, the view of the IT industry is changing and people are starting to demand greater corporate accountability.

¹⁴ In late August 2012, EU declined the application for a 3-year continuation of the makeITfair project, envisioning studies on the electronics industry's challenges and opportunities based on the UN Guiding Principles for Corporations and Human Rights, among other activities. However, the participating organisations will continue cooperate within the makeITfair.

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All makeITfair reports are available here: <http://makeitfair.org/en/the-facts/reports>