



Human rights risks in the ICT supply chain

make
ICT
fair

A collection of articles by Make ICT Fair

Make ICT Fair is an EU wide campaign that aims to improve the lives of workers and communities affected by the production of ICT devices such as smartphones and laptops. Through awareness raising, research and advocacy, the campaign highlights human rights impacts and environmental impacts along the ICT supply chains and inform on solutions. We target EU citizens, Public Procurers, Development Banks, Decision-makers and Companies to improve their purchasing practices and to align policies. Make ICT Fair is funded by the European Union, through the EU Dear Programme and involves eleven European civil society organisations and academia.



This document has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of Make ICT Fair and can under no circumstances be regarded as reflecting the position of the European Union (https://ec.europa.eu/europeaid/node/22_en).

Lead author: Jeroen Merk (The University of Edinburgh).

Contributors: Linda Scott Jakobsson (Swedwatch), Sebastian Smart (CATAPA and War on Want), Silke Ronsse (CATAPA and SNU), Community Mutual Assistance (Social NGO, commissioned by CEE Bankwatch Network), Daniel Popov (Za Zemiata, Friends of the Earth Bulgaria), Olof Björnsson (Swedwatch), Peter Pawlicki (Electronics Watch) and Josefina Hintz (ICLEI).

Editor: bart plantenga.

Layout and graphics: Alexandra Kuklinski (The University of Edinburgh) unless otherwise stated.

Published: 2021.

Special thanks to Alexis Heeren for coordinating this project.

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Introduction

Author: Jeroen Merk (The University of Edinburgh)

The electronics industry is one of the largest and fastest growing industries globally. But, a lack of effective regulation of the production companies and the business practices of the involved brands and contract manufacturers, means that assembly workers' human rights are not effectively protected. They are exposed to excessive working hours, poverty wages, forced labour, and dangerous working conditions.

At the same time, ICT sector growth also drives mineral mining expansion. This includes minerals such as gold and copper, which are used as components in electronic devices like printed circuits, microchips and transformers. The ICT sector consumes an estimated 35% of global copper production and some 9% of total gold production, with the average smartphone containing 15.12 grams of copper and 0.034 grams of gold. Mineral extraction comes with a broad range of human rights risks, including forced displacement, land grabbing, environmental destruction, dangerous working conditions and child labour violations.

Chemicals can be found in almost every aspect of the production process of electronic products, including mining, microchips manufacturing, product assembly to the final inspection of electronics products. Epidemiological studies have shown that many workers in the electronics industry are exposed to significant health risks such as miscarriages and cervical, breast and ovary cancer. Hazardous substances, such as N-hexane, benzene and glycol ethers, which are banned in Europe and the US, but still used in Asian factories.

Lastly, the dramatic growth of e-waste, which reached a volume of 45.79 million tons in 2016, has turned into a growing human rights and environmental concern. Much of the e-waste is dumped in developing countries, where workers are exposed to hazardous substances, and waste is processed in an environmentally harmful way, which in turn exposes communities to contaminated land, water and air.

This collection of articles brings together mapping, research and advocacy activities that took place as part of Make ICT Fair, an EU-funded project that aims to improve the lives of workers and those impacted along the various stages of the ICT supply chain. The project includes research, campaigning, capacity building and advocacy. Several risk-assessment and fact-finding missions into ICT supply chains have thus far been organised. This document provides only a short synopsis; the more detailed reports of the fact-finding missions are available via the links in figure 1 or will be published in the near future.

The Make ICT Fair project partners carried out research across the globe

Figure 1

Bankwatch

Bulgaria

Chapter 5, Gold and copper mining in Bulgaria: workers' rights

Report not yet published.

Armenia

Chapter 4, Gold mining in Armenia: freedom of expression

'Assessing the social impacts of the preparatory and development phases at Lydian International's Amulsar mine in Armenia through surveys of neighbouring communities.'

Swedwatch

Philippines

Chapter 6, Component manufacturing in the Philippines: hazardous chemicals

'Occupational poisoning in ICT manufacturing.'

Zambia

Chapter 1, Copper mining in Zambia: access to clean water and sanitation

'Copper with a cost – Human rights and environmental risks in the minerals supply chains of ICT: A case study from Zambia.'

CATAPA

Chile

Chapter 2, Copper mining in Chile: water contamination and risk of collapse

'Living Under Risk: Copper, Information and Communication Technologies (ICT) and Human Rights in Chile.'

Bolivia

Chapter 3, Tin, silver, zinc and lead mining in Bolivia: self-exploitation of cooperatives

'Towards a fairer ICT supply chain.'

Base map:
PeterHermesFurian
via Getty Images

We have divided this document into three main parts:

Part 1

Part one gives a snapshot from the various risk assessment and field research points of view. The first two cases concentrate on the human rights risks associated with copper mining projects in, respectively, Zambia and Chile. Both cases detail how copper mining is associated with severe environmental and human rights impacts. Chapter three concerns polymetal mining in Bolivia. Among other things, it looks at the consequences of the lack of mandatory social and environmental quality standards that could be imposed at the relevant levels on the companies during the purchasing process of these metals. Chapter four discusses concerns related to freedom of opinion and expression in the context of a proposed gold mine in Armenia. Chapter five looks at substandard working conditions and adverse environmental impacts in the Bulgarian mining sector. Chapter six looks at the use of chemicals in the Philippine electronics industry and discusses the severe health risks faced by women workers.

Part 2

Part two consists of two longer chapters that focus specifically on contract manufacturing. Chapter seven discusses the role of large contract manufacturers, such as Hon Hai Precision (Foxconn), in the electronics industry and the role they play in organising mass production on behalf of global brands like Apple. Chapter eight details the difficulties workers face around the world when they seek to exercise their right to freedom of association and collective bargaining. It discusses two main reasons: the political repression of trade unions and the anti-union attitudes of lead firms.

Part 3

Part 3 looks at interventions. Chapter 9 discusses Electronics Watch, which is an independent monitoring organisation that brings together public sector buyers and civil society organisations in electronics production regions, with human rights and global supply chain experts. And finally, Chapter 10 discusses the contribution public procurers could make to improve industry conditions. It departs from the notion that the state duty to protect human rights is limited to its role as a regulator and thus also includes the commercial relations between public actors and businesses. The chapter also outlines how public procurers have opportunities to include sustainability interventions across the procurement cycle.

Part 1.

**Case studies from
risk assessment and
field research**

1. Copper mining in Zambia: access to clean water and sanitation

Author: Linda Scott Jakobsson (Swedwatch)

Copper mining in Zambia is associated with severe environmental and human rights impacts. Zambia has the largest copper reserves in Africa.¹ By 2018, Zambia was the seventh largest copper producer in the world and second in Africa, after the Democratic Republic of Congo.² Thus, high risk Zambian copper is present in global ICT supply chains.

Zambian copper mining has a track record of environmental impacts on air, water and soil. About 10,000 hectares in the Zambian Copperbelt Province – where most of the mines are located – are contaminated by mineral waste,³ which constitutes an environmental risk to the surrounding area.⁴ Meanwhile, water pollution linked to mining is caused mainly by the discharge of toxic and acidic water, which spills into bodies of water, damaging aquatic life and agricultural lands.⁵ Reports have noted examples of toxic leakage from mining operations, which have polluted the surface- and groundwater, severely impacting hundreds of people's health.⁶

In Chingola, the Nchanga mining operations, owned by Konkola Copper Mines Plc. (KCM), have reportedly been polluting the waterways. These waterways are essential to the local communities surrounding Chingola. Community members claim that toxic spills and discharge of polluted and acidic wastewater from the mine have contaminated the Kafue River and its tributaries, as well as the groundwater that is used for cooking, cleaning and irrigating their crops.⁷ According to the claimants, the pollution has impacted their health, destroyed their farmlands and reduced crop yields.⁸

Swedwatch's findings from its field-based research indicate that the community members of Shimulala, outside Chingola, have suffered health problems from drinking polluted water. Community members stated that their farmlands on the river banks of the Mushishima stream have been destroyed by polluted wastewater and silt released from the Nchanga mine. Moreover, interviewees, claimed that the polluted soil

has reduced crop yields, which has had a very negative impact on their livelihoods. Further consequences include reduced food security and children being unable to attend school as a result of reduced income. Early marriages have, according to community members, increased as parents are no longer able to support their daughters. Although some community members have been compensated by the mining company for crop loss, the compensation has reportedly been insufficient to restore their livelihoods.

‘The water and land are acidic. It doesn't grow. So as a result, we have poverty.’

A man from Shimulala village



Discharge from the Nchanga mine has allegedly polluted the Mushishima stream and the surrounding farmland, negatively impacting crop yields.
Photo: Vilhelm Stokstad.



The waste mounds from the Nchanga mine dominate the city landscape in the town of Chingola. The Nchanga mine has allegedly released toxic wastewater and spills, affecting residents' access to clean water in the area. Photo: Vilhelm Stokstad.

Access to clean water and sanitation

The UN General Assembly has declared that access to clean water and sanitation is a human right.⁹ Water must be available, accessible, affordable, safe for consumption and domestic use and of an acceptable quality (i.e., an acceptable colour, odour and taste and free of chemical substances that may have a negative health impact).¹⁰ Clean water is a precondition for the enjoyment of other human rights.¹¹ For example, water pollution caused by industrial processing and effluents may have a negative impact on people's right to health or it may jeopardise their right to food and livelihoods when crops, livestock or fish are contaminated.¹²

Swedwatch concluded that mining operations in Chingola have a negative impact on water as a human right, leaving the water unsafe and of an unacceptable quality. This case highlights how mining operations can cause negative impacts on the human right to clean water and, by extension, other human rights.

The presented example of how copper mining in Zambia impacts human rights and access to clean water is by no means unique. On a global level, there are many examples of large-scale copper mining operations causing environmental pollution and impacting human rights. Thus, copper can be considered a high-risk mineral. Copper is a vital component of ICT products due to its conductivity properties. Following legal obligations and public pressure, the ICT sector has in general made efforts concerning responsible sourcing of conflict minerals (tin, tantalum, tungsten and gold), with varying degree of success and

commitment. Swedwatch has found strong indications that, although the scope of minerals and Human Rights Due Diligence efforts in minerals supply chains may vary between ICT companies, there is a need for the ICT sector to increase its actions in addressing risks associated with copper extraction in mineral supply chains. Findings from Zambia and the example of how copper mining risks impacting access to clean water highlights the need for the ICT sector to expand beyond the scope of conflict minerals.



Further reading:

Copper with a Cost – Human rights and environmental risks in the mineral supply chains of ICT: A case study from Zambia

swedwatch.org/wp-content/uploads/2019/05/94_Zambia_190429_enkelsidor.pdf

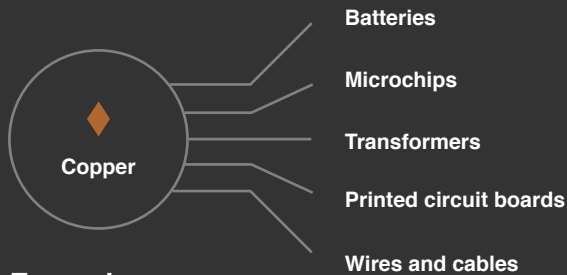
Copper

Figure 3



A smartphone contains
15.12 grams of copper

Source: Jardim, Elizabeth (2017)
'From Smart to Senseless: The Global Impact of 10 Years of Smartphones'



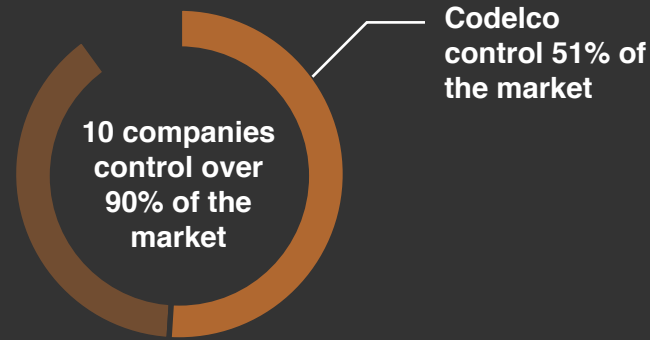
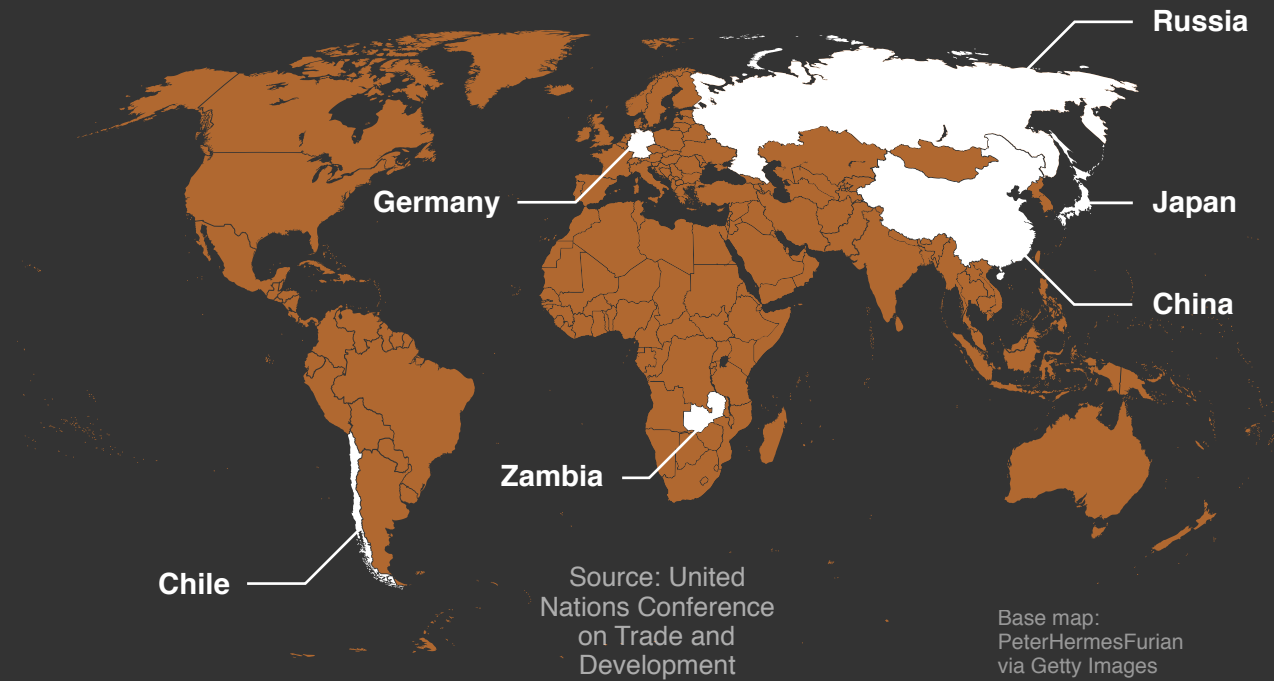
Examples of uses in electronics



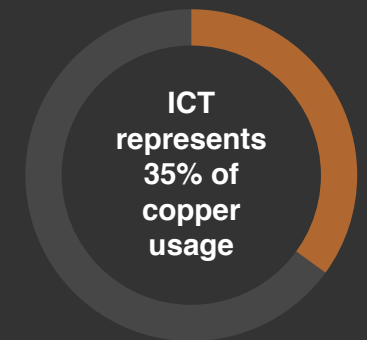
Every tonne of copper extracted can generate as much as 99 tonnes of waste

Source: 'Copper with a cost'

World's top exporters of copper 2019



Source: Infiniti Research Limited (2016) 'Global Non-Ferrous Metals Market,' Toronto, p. 21



Source: Infiniti Research Limited (2016) 'Global Non-Ferrous Metals Market'

Recommendations to companies in ICT supply chains:

- Abide by the international standards such as the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas and the UN Guiding Principles of Business and Human Rights that establish effective human rights due diligence processes that include high-risk minerals such as copper. Engage with stakeholders and rights holders in mining communities to prevent and mitigate risks and impacts.
- Increase transparency in line with the UN Guiding Principles. Trace and publicly disclose smelters and refiners in supply chains for copper and other high-risk minerals in addition to 3TG and cobalt, which are present in ICT supply chains.
- Contribute to increased leverage and sustainable sourcing of minerals through constructive collaboration with all stakeholders present in mineral supply chains, on human rights and environmental impacts associated with minerals beyond 3TG and cobalt.

Recommendations to legislators in the European Union:

- When evaluated in 2023, expand the European Union Conflict Minerals Regulation to include copper and other high-risk minerals beyond 3TG. In addition to addressing the issue of conflict, the legislation should also require companies to ensure that, at the source minerals stage, effective human rights due diligence is performed in accordance with international standards. The EU legislation should be adjusted to also include ICT companies and distributors beyond mineral importers, smelters and refiners.

To contracting authorities within the European Union:

- Include social criteria in public procurement processes and contracts for ICT products. Criteria should ensure that suppliers perform effective human rights due diligence within their mineral supply chains of ICT products, in line with international standards and best practice. Closely monitor suppliers' compliance with the requirements and collaborate with other contracting authorities to increase leverage.

Endnotes

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2. Copper mining in Chile: water contamination and risk of collapse

Author: Sebastian Smart (CATAPA and War on Want)

The human right to clean water has also been the focus of an intense social struggle at the Los Pelambres copper mine in north-central Chile. Chile, currently the largest producer of copper in the world, extracted 28% of the world's total in 2015.¹ Mineral mining currently represents 54% of Chile's total exports, of which copper represents 91% of the total metal and mineral exports.

Antofagasta PLC controls the Los Pelambres copper mine, the fifth largest in the world, producing 2% of the world's copper.² The mining company stores its water and mining waste behind the El Mauro tailings dam, the largest of its kind in Latin America, and one of the largest in the world. The dam is located at the head of the Pupio River, above the small town of Caimanes, a community that has been opposing the Los Pelambres mining project for 14 years now.

‘They came here with false advertising. They said they would give us work. They created the social neighbourhood committee number 5 to defend the mining operations. Historically we have had number 4 representing the community. I participated in the creation of number 5. I was a member, because I thought that it was going to be good, that the company would employ our children, but time passed and nothing happened.’

Interview Caimanes

Water use and contamination

The scale of extraction is directly related to its intensity, especially when it comes to water and energy use. Chile's copper mining activities uses approximately 14.7 cubic meters of water per second.³ The Chilean government estimates that in the next decade this sector will increase its water consumption by 66%, to some 24.6 cubic meters per second. Efforts have been made to promote the use of desalinated seawater but, thus far, the mining sector has consumed mostly fresh water.

Residents of Caimanes have been expressing their concerns over pollution of the local water supply since the El Mauro dam was built.⁴ After residents complained to the investigative police (PDI) in 2012, Osvaldo Iribarren, the regional representative of the Minister of Health, stated publicly that the water was safe for human consumption.⁵

Early in 2012, the PDI requested that the water be tested by the Environmental Crime Team (Brigada Investigadora de Delitos Medio Ambientales, Bidema). The samples were sent to the Police Forensic Laboratory (Laboratório de Criminalística Central, Lacrim), which concluded that contamination levels for mercury, iron and manganese in the water were all above the legal maximum established by Chilean law. The report further stated that the major cause of the contamination was the El Mauro tailing dam.⁶

Another study found that Caimanes' water contained mercury levels of 26% and iron levels of 50% above the legal Chilean limit. Excessive human absorption of metals via contaminated water may lead to chronic health problems. In fact, excessive manganese may produce debilitating psychiatric effects, while excessive iron intake may result in, among other effects, increases in cardiovascular and neurological diseases.⁷ Agriculture and food security are at risk because of water contamination and lower levels of water in the fields. Local communities and their cattle suffer as a result of these low levels.

Risks and Impacts of El Mauro Tailings Dam

Furthermore, the dam is situated on a faultline, which means there is a high risk of the dam collapsing during an earthquake. Chile is one of the most seismically active countries in the world and earthquakes have been one of the main causes of tailings dam collapses in Chile, alongside overtopping, seepage and foundation instability.⁸ Engineer Michael Davies has pointed out that the failure rate for tailings dams is approximately 10 times greater than that of water-retention dams.⁹ Given the high level of seismicity and a history of associated dam failures, Caimanes residents have lived in fear of an imminent collapse of the El Mauro tailings dam since it was completed. Critics of the dam estimate that residents would have as little as ten minutes to escape the flooding of some 1700 million tonnes of toxic waste if the dam were to collapse.¹⁰ Furthermore, because of the size of the dam, the flooding could potentially trigger devastating tremors, a phenomenon known as 'reservoir-induced seismicity'.¹¹

The Brumadinho tailings dam

On 25 January 2019, the Brumadinho tailings dam at the Córrego do Feijão iron mine in Brazil collapsed, unleashing 12 million cubic metres of toxic mining waste, leaving a trail of devastation in its wake that included the deaths of an estimated 300 mine workers and local residents. Many more are still missing but presumed dead. A significant section of the Paraopeba river ecosystem was contaminated, which adversely affects countless rural communities.¹² Less than four years earlier, another tailings dam burst at the Samarco mining complex just 90 km from Brumadinho, killing 19 people, destroying 600 km of the Rio Doce basin and affecting the lives of some one million inhabitants.¹³ Both tailings dams were (co)owned by the same multinational mining giant, Vale S.A.¹⁴

Water use and contamination

In July 2013, Chile's Supreme Court agreed with local communities when it ruled that the El Mauro tailings dam represents a 'threat to the physical and mental health of the residents of Caimanes.'¹⁵ The court ruling stipulates that the Minera Los Pelambres must draft a dam collapse emergency plan that involves the National Geology and Mining Service (Sernageomin), the Home Office and Department of Security (Onemi) and Water Department, and the Ministry of Public Works (DGA).¹⁶ To date, the mining company has yet to adequately comply with the court injunction.

While copper remains very important for the Chilean market, the current and potential human rights and environmental violations incurred by mining activities remains high. We have seen the incapacity of the state to protect human rights abuses of nonstate actors, the limitations of companies in terms of their responsibility to respect human rights, including companies situated throughout the supply chain; and the incapacity of the international community to establish prompt and secure mechanisms to respond to those human rights abuses.

Taking the case of Pelambres, we have observed how mining operations may affect communities, the environment and workers' rights and the lack of transparency in the usage and distribution of copper.



Further reading:

Living Under Risk: Copper, Information and Communication Technologies (ICT) and Human Rights in Chile

drive.google.com/file/d/16KrE-huUwavHLljADa0PIGZPrsvZV-EG/view



Figure 1



Figure 2

Protest march in the streets of Santiago, Chile organised by 'Coordinadora Ciudadana No Alto Maipo' to defend the Alto Maipo River's water.
Photo: CATAPA and War on Want.

Recommendations

Building on these facts, we would like to propose the following recommendations for the Chilean state, for the international community and for companies to ensure the protection of the environment and the human rights of people affected by mining operations:

- Guarantee the free, prior and informed consent of communities when a project affects their territories. Safeguarding this right includes ensuring the right of communities to independent consultation, and a procedure whereby no project is advanced until there is certainty that the community has comprehensively agreed to such a project;
- Guarantee a clear and transparent process for land titling that is planned using proper consultations with local communities; companies have a responsibility to respect human and environmental rights. As such, they need to transparently report on any human rights violations and environmental degradation and significantly reduce the impact.

Endnotes

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3. Tin, silver, zinc and lead mining in Bolivia: self-exploitation of cooperatives

Author: Silke Ronsse (CATAPA and SNU)

Research and fact-finding mission in Oruro, Bolivia in the context of the project 'Make ICT Fair'

With literature on metal supply chains beyond trade being very limited, CATAPA's investigation on polymetal mining in Bolivia aimed at unraveling the subnational, national and transnational actors and processes involved in mining activities. Field research was carried out in the department of Oruro, Bolivia. The fact-finding mission provides elements to assess the local implications of the global ICT industry. This helps to shape a specific meaning of what 'Making ICT Fair' would mean in each part of the supply chain by providing a framework to determine labour, community, environmental and legal issues involved in this targeted context.

In Oruro (Bolivia), the supply chain for tin, silver, lead and zinc – metals that are (amongst others) required by the electronics industry for the production of its devices – involves multiple actors. Before export, minerals here are extracted mainly by mining cooperatives (beside state mines and large and small-scale private mines) and sold to local trading companies, that are therefore the first suppliers within the international supply chain of these metals. Ore minerals are then concentrated. Tin is smelted by one of the two industrial smelters located in Oruro and then exported, mostly to the USA and the Netherlands. Silver, lead and zinc concentrates are directly exported to metallurgical plants in Asia (South Korea, China and Japan) and Europe (Belgium, the Netherlands and Spain).

Investigations were focussing on extraction, processing and smelting for export. Case studies provide concrete examples of six mining cooperatives, some local suppliers, the state smelter and the main international traders active in the area. This research revealed the consequences of the lack of mandatory social and environmental quality standards that could be imposed at the relevant scales to the companies when buying these metals; and the absence of traceability criteria that could create a link between the different actors and therefore a possible 'social responsibility' of the buyers toward the local actors.

Assessing the implications of mining in Oruro

Poor health and safety conditions in the mines

The specificity of Oruro relates to the major role played by small-scale cooperatives in Bolivia's local mining economy, as this type of mining involves a large amount of the region's workforce. These cooperatives are indeed a system of 'self exploitation' as they don't have direct contact with the companies that are buying their minerals. If the cooperative framework implies a certain freedom for the workers (who are supposed to be associates of the cooperatives), it also leads to operations being conducted in a very traditional way, i.e., often still relying on manual work, despite a relative increase in mechanisation the last decennia.

At the extraction stage, cooperative workers are subjected to poor safety and health conditions, the most significant being the limited protection of respirators, which leads to a number of cases of silicosis (also known as the miners' disease, caused by silica dust in the lungs).

Cooperative miners working in the areas of the concentration process are impacted by the uncontrolled and careless use of toxic substances such as xanthate, cyanide and kerosene, which cause direct irritation of the eyes as well as long-term effects of the nervous system and internal organs. Health and skin disorders are caused by working in direct contact with acids and heavy metals as well as excessive exposure to sun and dust.

Another major problem of local mining activities is the lack of long-term planning. As miners expand their mining explorations, the lack of information available can lead to dangerous situations whereby an area is accessed that had previously been marked as a 'no-go-zone'.

Endangering food sovereignty and biodiverse ecosystems

Despite laws that protect 'Mother Earth' in Bolivia and the requirement (in most cases) of acquiring an environmental license prior to conducting mining extractions, all mining activities imply significant environmental damage. The main impacts are mine byproducts such as acid water, the mining waste dumped into the open air and the discharge of the chemicals used in the concentration processes (a pH of 3 or lower is common for the water found in mining areas).

The mining exploitations have a serious impact on agriculture nearby in the area and further downstream. The environmental consequences often force farmers to become miners since their lands are too contaminated. It is hard to calculate all the impacts on the ecosystems stemming from the many mining sites and it is just as hard to remediate.

Women are in a particularly precarious situation

Women in cooperative mining in Oruro are mostly elderly widows, having lost their husbands in mining or related activities, or single mothers with children. Their access to cooperative membership is restricted because women are traditionally believed to bring bad luck to the mines. Thus, they mainly work outside smashing discarded rocks or in other areas with fewer income-earning possibilities.

The miners' incomes depend on luck – either they find metal-rich minerals or they don't. In the selling process, women are often tricked and paid an unfair price. Many women work informally, even outside the cooperative framework. They do not have health insurance or a pension fund. They are generally the main caregivers of their families, hence, women almost always carry the double burden of productive and reproductive work.

Consequences for the generations

The environmental degradation caused by mining activities has an impact on agricultural activities, making it impossible in many areas to grow crops, raise cattle or fish. This has led to the migration of farming communities towards mining sites and cities.

The lack of capital in this cooperative model makes it difficult to sustainably manage the mining activities. The short-term perspective creates uncertainty regarding the incomes of the miners, especially in periods of low prices, but also due to the type of the ore they extract.

Due to low metal prices, cooperatives may have difficulties investing in improving productivity of the mine through machinery, engineering and exploration for future ore veins. International commodity trading companies benefit from their oligarchic position by using strategies to unfairly reduce the price of minerals at the origin, a strategy which directly impacts the cooperatives – the weakest link of the chain in international trade. The cooperatives face losses as a result.

Make ICT Fair in Oruro: a multi-scale framework

Complex situation for Bolivia to respect the human rights at stake

The investigations in Oruro have shown that there is a need to raise awareness about human rights violations in mining areas at the state level and to call for the improvement of their conditions. This is necessary to provide resources and controlling personnel in order to guarantee the enforcement of laws regarding the protection of 'Mother Earth' and the various environmental regulations, but also for the monitoring of human rights regarding social, labour and safety standards.

Bolivia has ratified different international human rights instruments such as the Universal Declaration of Human Rights, which obliges states to provide 'just and favorable conditions of work' (Article 23) as well as 'the right of everyone to a standard of living that is adequate for the health

and well-being of himself and his family... and the right to provisions in the event of unemployment in circumstances beyond his control' (Article 25 § 1).

The 1976 International Covenant on Economic, Social and Cultural Rights (ICESCR) of the International Labour Organization (ILO) obliges states to guarantee 'safe and healthy working conditions' (Article 7 ii b) as well as the 'highest attainable standard of health' (Article 12 i).

The American Convention on Human Rights (also known as the Pact of San José) also provides protection for Bolivian miners, which foresees the right of 'just, equitable and satisfactory conditions of work' (Article 7) and 'the right to health' (Article 10).

Cooperatives employ the most people, while private mines extract the most minerals

2017



Source: 'Towards a fairer ICT supply chain'

Need for monitored fair and responsible criteria in the international trade

The international trade of Oruro's zinc-silver-lead concentrates is dominated by a small group of international companies importing and reselling or smelting these minerals: Korea Zinc, Trafigura and Glencore. Even if these companies are not legally bound by the human rights treaties mentioned above, they are the core stakeholders within the chain and are responsible for these violations through a controlled fulfillment of the UN's Guiding Principles on Business and Human Rights and the OECD's Due Diligence Guidance for Responsible Supply Chains.

Tracing the supply chain aims to shape a more responsible framework for the relations between the global companies and their different suppliers, as part of a growing

call for social responsibility of transnational corporations. This would mean, regarding the ICT supply chain, that extracted minerals which fail to meet minimal social and environmental standards can no longer be traded on the international market.

The OECD Guide Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas specifically defines 'Due Diligence' as an 'on-going, proactive and reactive process through which companies can ensure that they respect human rights and help them ensure they observe international law.'

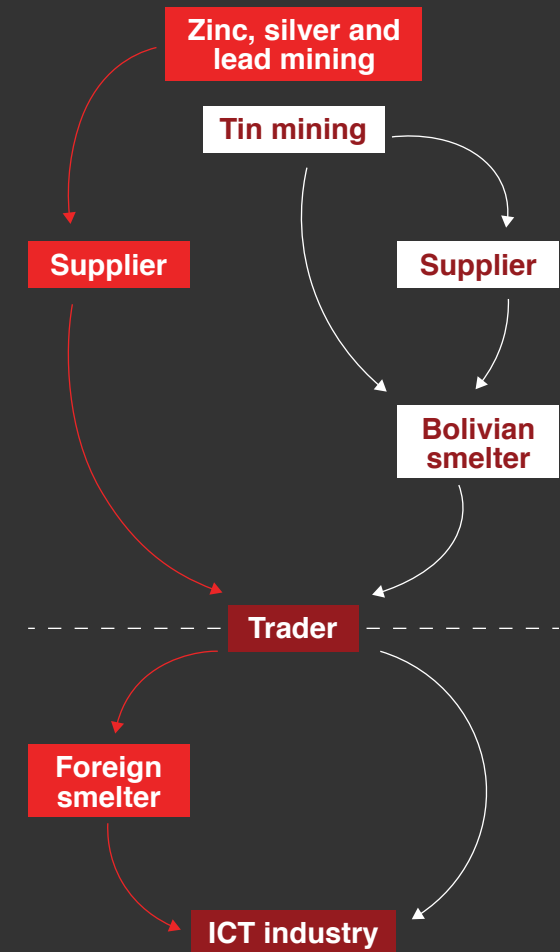
Further reading:

Towards a fairer ICT supply chain

www.catapa.be/en/towards-a-fairer-ict-supply-chain-bolivia-case



The supply chain for tin, silver, lead and zinc in the department of Oruro



Source: 'Towards a fairer ICT supply chain'

4. Gold mining in Armenia: freedom of expression

Author: Community Mutual Assistance (Social NGO, commissioned by CEE Bankwatch Network)

Mineral mining has the potential to adversely affect the environment and rights of people living in the vicinity of mines. Mining activities are a risk not only to peoples' livelihoods, which are very often connected with small scale sustainable activities, but also to their right to be meaningfully informed and consulted about the investments impacting their lives, in line with the right to information, freedom of opinion and expression stated in art. 19 of the Universal Declaration of Human Rights.

Gold is a mineral that is used extensively in the ICT industry. Approximately 9% of all gold is currently used in the electronics sector.¹ Since 2006, Lydian International has developed plans to establish a gold mine on Amulsar mountain, situated in central Armenia close to the city of Jermuk. Lydian described the mine as a low-cost operation that would produce approximately 225,000 ounces of gold annually over a 10-year period.

Jermuk is a popular spa town and tourist destination. Local residents also make their livelihoods tending apricot orchards, collecting wild plants, breeding animals and farming fish.

Amulsar Mountain also feeds a number of very important water basins in the country.

Plans to use a mineral processing and extraction technology known as cyanide leaching at the mine were considered a direct threat to the local environment and surrounding communities, due to the potentially negative impacts on water and air quality. This led to fears about the future of the communities that lived in the area immediately surrounding Amulsar Mountain and the nearby spa town of Jermuk.

Preparations for the mine, which should have included meaningful engagement with local communities, were not conducted in a transparent manner. Local residents were never consulted during the Environmental and Impact Assessment decision-making process in 2015–2016. Communities thus presented their legal arguments, which have yet to produce any positive results. As a result of their concerns, local residents fought to oppose the mine until they could be fully consulted and informed about the consequences. Communities raised a number of legal challenges to stop the progression of the mine, but these were not successful. Locals were left feeling like

they had no choice but to block the road. On 22 June 2018, they initiated an ongoing blockade of the mining roads to hinder mine operations.

CEE Bankwatch Network and Community Mutual Assistance conducted sociological research² in 2018 to assess the social impacts of the preparatory and development phases of Lydian International's Amulsar Mine. The results of the surveys conducted in neighbouring communities revealed that local Armenians near the Amulsar mine did not feel that they had been properly informed about the impact of mining operations and thus lived in fear over issues such as health, access to clean water and their traditional livelihoods. Respondents insisted that they were never informed about the possible negative social impacts of the mine during Lydian's outreach campaign. In fact, while most of the respondents were particularly concerned about the potential negative impacts of the mine on their health, it seems that the main topics addressed during Lydian's discussions with community members were the promotion of land sales, promises of employment and the social contributions that the mine would bring to their communities.

In 2018, a letter³ drafted by Jermuk residents, environmental activists and civil society organisations was sent to the UN High Commissioner for Human Rights, Michel Bachelet, and Rapporteurs, to highlight the community's concern and the ongoing situation. This led to a visit by the United Nations Special Rapporteur on Rights to Freedom of Peaceful Assembly and of Association Clément Nyaletsossi Voule to Armenia in November 2018, where he met with environmental groups protesting unsustainable natural resources exploitation. At the end of the Special Rapporteur's visit on 16 November 2018, he urged the Armenian government to carry out genuine consultations so that the mining operations would abide by the Guiding Principles on Business and Human Rights and Sustainable Development Goals.

Lydian International ignored these calls. Instead, the company used force to break up the roadblocks, intimidated and discredited

members of the local community and sued protesters and activists in court. Armenian court investigations revealed that Lydian Armenia employees used fake social media accounts to mislead public opinion and sway local residents. A fake Facebook page was found to have published defamatory information about the environmentalists, Jermuk's residents and others concerned about the impact of the mine.⁴

Lydian international also attempted to stifle criticism from lawyers, civil society and local communities speaking out against the damage wrought by the project by starting court cases called 'Strategic Lawsuit Against Public Participation' (SLAPP).⁵ 'Strategic Lawsuit Against Public Participation' is a lawsuit filed in retaliation for speaking up or organising public opposition against a business activity. SLAPPs are usually brought up by developers against activists who oppose their projects. They are rarely intended to compensate project promoters

for damage, because those accused do not have the financial means. Cases can get stuck in the legal system and often fail to be resolved. The legal and staff costs that a company incurs by the company in a lawsuit can significantly exceed the money collected as a result of it. The purpose of SLAPPs is therefore to intimidate activists,⁶ force them to 'measure their words' by preoccupying them with lengthy and expensive court cases, and ultimately to silence and paralyse public criticism.⁷ Over the course of this dispute, Lydian filed no less than 15 such suits against dissenting voices, largely as an attempt to silence criticism.

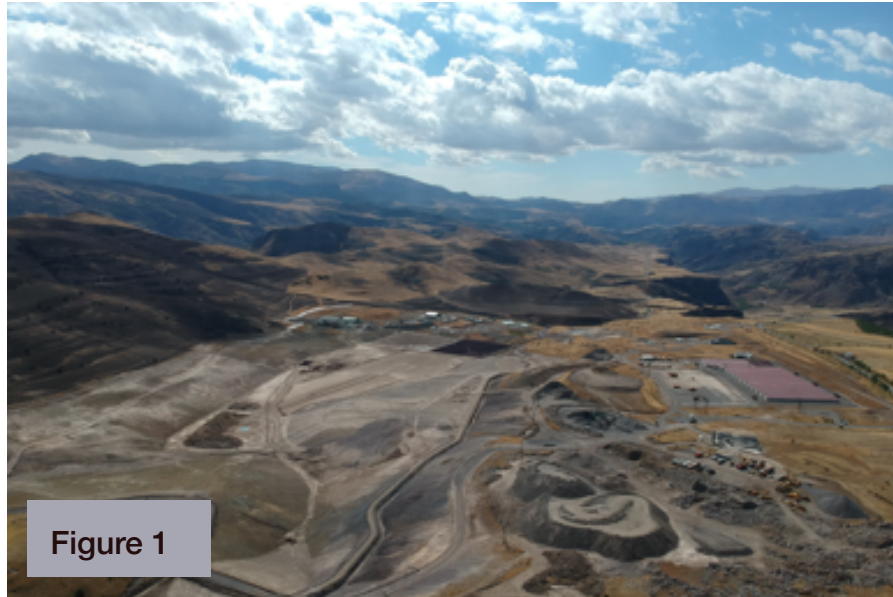


Figure 1

The Amulsar Mine in Armenia,
photo: CEE Bankwatch.

The current situation

After two years of the blockade, in August 2020, Armenian protesters were forcibly removed by the mine's newly-hired security detail. Then, in 2020, Lydian filed for bankruptcy protection in a Canadian court after being delisted from the Toronto stock exchange. As of November 2020, the mine has not been developed and may never be completed.

Recommendations

- The Government of Armenia should have secured the safety and security of Armenian citizens who were exercising their right to protest and demanding proper consultations, should have protected them from threats and legal prosecution and should have ensured their meaningful participation in the decision-making process for the Amulsar mine. The government failed in its responsibility to hold Lydian accountable for complying with environmental, social and human rights standards during the development stages of the mine.

Further reading:



Assessing the social impacts of the preparatory and development phases at Lydian International's Amulsar mine

bankwatch.org/wp-content/uploads/2019/01/Amulsar.-Report-1-Social-min.pdf

www.armecofront.net/en/category/amulsar-2
bankwatch.org/tag/amulsar

Endnotes

- 1 Statista website, www.statista.com/statistics/299609/gold-demand-by-industry-sector-share [last accessed, 14 May 2019].
- 2 See Bankwatch (2018) 'Assessing the social impacts of the preparatory and development phases at Lydian International's Amulsar mine in Armenia through surveys of neighbouring communities,' www.bankwatch.org/wp-content/uploads/2019/01/Amulsar.-Report-1-Social-min.pdf [last accessed, 14 May 2019].
- 3 Armenian Environmental Front (2018) 'Arnecofront Amulsar: appeal to the UN High Commissioner for Human Rights and Armenia's acting Prime Minister,' www.armecofront.net/en/amulsar-2/amulsar-appeal-to-the-un-high-commissioner-for-human-rights-and-armenias-acting-prime-minister [last accessed, 14 May 2019].
- 4 See the case of Yenoqyan, who is an Armenian journalist and local resident of the village of Gndevaz village. She has been raising issues surrounding the Amulsar gold mine, as well those involving human rights abuses of local residents for about 8 years. See Armenian Environmental Front (2013) www.armecofront.net/en/news/criminal-case-reveals-that-lydian-armenia-mining-company-employees-were-spying-and-running-fake-profiles-in-social-media [last accessed, 14 May 2019].
- 5 Osservatorio Balcani e Caucaso (2020) 'SLAPPs: Strategic Lawsuits Against Public Participation,' www.balcanicaucaso.org/eng/ECPMF/ECPMF-news/SLAPPs-Strategic-Lawsuits-Against-Public-Participation-198695.
- 6 GRAIN (2018) 'Silencing human rights and environmental defenders: the overuse of Strategic Lawsuits against Public Participation (SLAPP) by corporations,' www.grain.org/en/article/5971-silencing-human-rights-and-environmental-defenders-the-overuse-of-strategic-lawsuits-against-public-participation-slapp-by-corporations.
- 7 *The Guardian* (2019) 'Adani's "legal intimidation" tactics against community groups a "threat to democracy",' www.theguardian.com/business/2019/feb/19/adanis-legal-intimidation-tactics-against-community-groups-a-threat-to-democracy.

5. Gold and copper mining in Bulgaria: workers' rights

Author: Daniel Popov (Za Zemiata, Friends of the Earth Bulgaria)

The testimonies of people employed in three mining and metallurgy companies in Bulgaria's Panagyurishte region reveal the problems involving labour conditions in the gold and copper supply chain.

The Bulgarian mining sector collapsed in the early 1990s. A large number of mines closed due to environmental problems, poor operational and financial performance and decreased domestic demand. Bulgaria's new national policy for the development of the mining industry (the 'Mining Strategy'), adopted in 2015, describes the mining sector as a defining structural feature of the country's economy, representing some 5% of Bulgaria's GDP. According to the data provided in the Strategy, about 25,000 workers are directly employed in the sector, which includes coal, oil and gas, metals, non-metallic minerals and construction materials. The Strategy also states that Bulgaria has considerable potential to become a regional leader in this sector because it is the third largest copper and fourth largest gold producer in Europe. The sector restart has failed, however, to guarantee safe and just working conditions for its miners and foundry workers.

Research in Bulgaria

In November 2019, CEE Bankwatch Network commissioned a survey among the workers of three companies operating in Bulgaria's Panagyurishte region.¹ As Panagyurishte is Bulgaria's largest metal mining region, the aim of the survey was to identify core issues associated with the supply chain of materials for the electronics industry.

The survey methodology consisted of a standardised face-to-face interview. In total, 61 interviews were conducted with both workers and local residents. The selection of respondents employed in the mining and processing industry in the Panagyurishte Mining District (Pirdop, Zlatitsa, Chelopech, Panagyurishte) was conducted, with a focus on people with significant experience in the industry or who have active contact with workers in the mining sector. Relatives and subcontractors were also selected.

As Bulgarian employers usually require workers to sign confidentiality statements related to their salaries and working conditions, the interviews with workers took place outside of their workplaces for security reasons. Another group of interviewees included local residents, who were asked about the local environmental situation and residents' health in the areas around the three mines. All of the interviews were anonymised. The interviewed workers were employed by; Asarel Medet AD, which operates an open-pit copper mine and a gold mine; Aurubis Bulgaria AD, which operates smelters that produce copper, gold, other rare metals and sulphuric acid; and Chelopech Mining EAD, which operates an underground copper mine and a gold mine. Chelopech received support from the European Bank for Reconstruction and Development in 2005 and 2008.

Findings

Core issues identified by the research include the poor treatment of subcontracted workers, a lack of independent trade unions, the use of precarious and low-wage contracts, intimidation and silencing of critics, and a negative impact on the health of workers and local communities.

a. Unequal treatment of directly and indirectly employed workers

In the mines covered by the survey, workers are employed directly as well as indirectly, by subcontractors.

Directly employed workers receive standard social and health security payments, regular vacations and additional payments for meals and overtime. This is not the case for subcontracted workers, who often receive just half the wages of a directly employed worker.

Number of employees

Company	Directly employed workers	Subcontracted workers
Asarel Medet AD	1,200	400
Aurubis Bulgaria AD	860	1,640
Chelopech Mining EAD	1,000	400

Average monthly wages in 2018

Company	Directly employed workers	Subcontracted workers
Asarel Medet AD	€800	€300-400
Aurubis Bulgaria AD	€1,000	€400-500
Chelopech Mining EAD	€1,160	€300-400

b. Employer controlled unions

The Constitution of Bulgaria and the Labour Code of Bulgaria provides for the right to form independent trade unions. The survey concluded that the unions present in the three companies are controlled by the employer, and are thus not independent. These unions are known as company or 'yellow' unions.

Trade unions in Panagyrishte mining region

The chairs of the Podkrepa mining union and Confederation of Independent Syndicates in Bulgaria (CISB) mining union are nominated by the Bulgarian Mining and Geology Chamber and offered 13,000 shares of Asarel Medet AD stock, while ordinary workers receive only 300 shares. Interviewed workers pointed out that both union chairs are millionaires and allies of the mining companies' owners. Similarly, the chair of Aurubis Bulgaria AD's union is a former military officer who has close connections with the authorities. 'Union' efforts tend to focus on team building and 'challenges' for higher Christmas bonuses. It is thus not surprising that there has never been a strike in the Panagyrishte region mining industry since the privatisation of Asarel Medet AD and Chelopech Mining EAD.

c. Intimidation and silencing workers

Interviewees commented that they were afraid to make demands of their employers. Workers are forced to sign confidentiality statements regarding salaries and working conditions. Those who refuse are not hired or are dismissed. These confidentiality statements allow company owners to undermine worker solidarity and maintain control by instilling fear in the workforce by threatening sanctions and job terminations. Aurubis Bulgaria AG's managers use these confidentiality statement restrictions so effectively against their workers that some reported that they are afraid to speak out about poor working conditions – even after they have quit or been dismissed. Company transparency in all three companies regarding working conditions and salaries is replaced by 'information centers,' which do not answer any of the workers' questions.

d. Negative health and safety impacts

Chelopech Mining EAD workers reported that they are regularly exposed to dust, arsenic and other heavy metals as well as chemical reagents used in the flotation process. Miners working in Asarel Medet AD's open-pit mine and flotation factory often complained of mine dust, heavy metals and chemical reagents. Metallurgists working in Aurubis Bulgaria AG's metallurgy facilities complained of exposure to sulphur dioxide and heavy metals gases. The local population has also been exposed to dust coming from the open-pit mine.

Workers at all three companies declared that this experience is not unusual since corrupt doctors hired by the companies fail to properly inform workers about their health. Furthermore, the Ministry of Health does not provide statistics regarding diseases on the local and regional levels and does not perform any focused research on the health of local populations in the vicinity of mining facilities.

Workers at all three companies declared that this experience is not unusual since corrupt doctors hired by the companies fail to properly inform workers about their health. Furthermore, the Ministry of Health does not provide statistics regarding diseases on the local and regional levels and does not perform any focused research on the health of local populations in the vicinity of mining facilities.

'I spit black in the morning. There are periodic medical check-ups and (they) all show "healthy". If I tell my boss that I'm not feeling well, my head hurts, he (the boss) yells, "you're fine".'

30-year-old Chelopech mine engineer

e. Negative environmental impacts

Two dangerous waste facilities used by the mining industry – the Asarel Medet AD Lyulyakovitza mining waste tailing dam and the Vlajkov Vrah mining waste facility (used to supply the construction industry) – have caused fear among the local residents. The Panagyurishte mine workers and residents from the local villages are afraid of the gigantic Asarel Medet AD tailing dam, especially since the ore deposit (the amount of ore economically viable to be extracted) at the company's open-pit copper mine is expected to run out in 5-7 years.

‘Offshore owners of the company will take their money to some offshore island and the mining waste will remain here in the tailing dam and nobody will care for its safety!’

Local voices

The environmental and economic impact of mining on the local population has been negative. Agricultural lands and waters are polluted and acid rain is common. This makes it impossible for local residents to maintain their small agrarian enterprises such as livestock farms and rose and medicinal herb gardens.

Conclusion

The mining and processing industries are extremely important for Bulgaria's economy and the economic well-being of the Panagyurishte mining area in particular. However, the mining industry operating in the region must ensure the rights of its workers and the health and safety of local communities.

Endnote

- 1 The research was conducted between 2-22 November 2019 by Free Information Surveys EOOD; a professional sociological company based in Stara Zagora, Bulgaria. Free Information Service Ltd was commissioned by CEE Bankwatch Network to conduct sociological surveys on the situation of the workers in the copper and gold mining industries and the ICT raw materials supply chain in Panagyurishte.

6. Component manufacturing in the Philippines: hazardous chemicals

Author: Olof Björnsson (Swedwatch)

Exposure to hazardous chemicals can have devastating impacts on nearly all human rights. Among those most exposed to hazardous chemicals in any context are workers – a UN report has estimated that one worker dies every 30 seconds from exposure to toxic chemicals at work.

The ICT sector is no exception. The supply chains for items like smartphones, tablets and laptops are long and complex, often resemble a web rather than a chain. The workers who manufacture these goods, or the components that they are made from, are at risk of a wide range of human rights impacts, including the harmful effects of the chemicals used in the process. These, mainly female, workers are in many places falling victim to crippling and deadly occupational illnesses.

All of the companies involved, both those manufacturing the products and those supplying them to European consumers, have a responsibility to respect human rights throughout their operations. But despite the well-documented impacts in the production

of ICT products, Swedwatch research reveals that the issues related to exposure to hazardous chemicals are not being sufficiently addressed.

The health risks connected to the manufacturing of ICT products have been known since the early years of the industry, in Silicon Valley in the 1980s. Following alarming reports, the industry migrated to countries with weaker laws protecting workers, many of them in Asia. Today workers in these countries suffer symptoms related to chemical exposure similar to those experienced in the USA in the 1980s. The research presented in *Toxic Tech* tells the story of female workers in one of the countries serving the global demand for ICT devices, the Philippines.

The manufacturing of ICT products in the Philippines takes place in Special Economic Zones (SEZs) where working conditions are often poor and the social and legal protections for workers insufficient. Women interviewed for this report work in poorly ventilated rooms where they are exposed

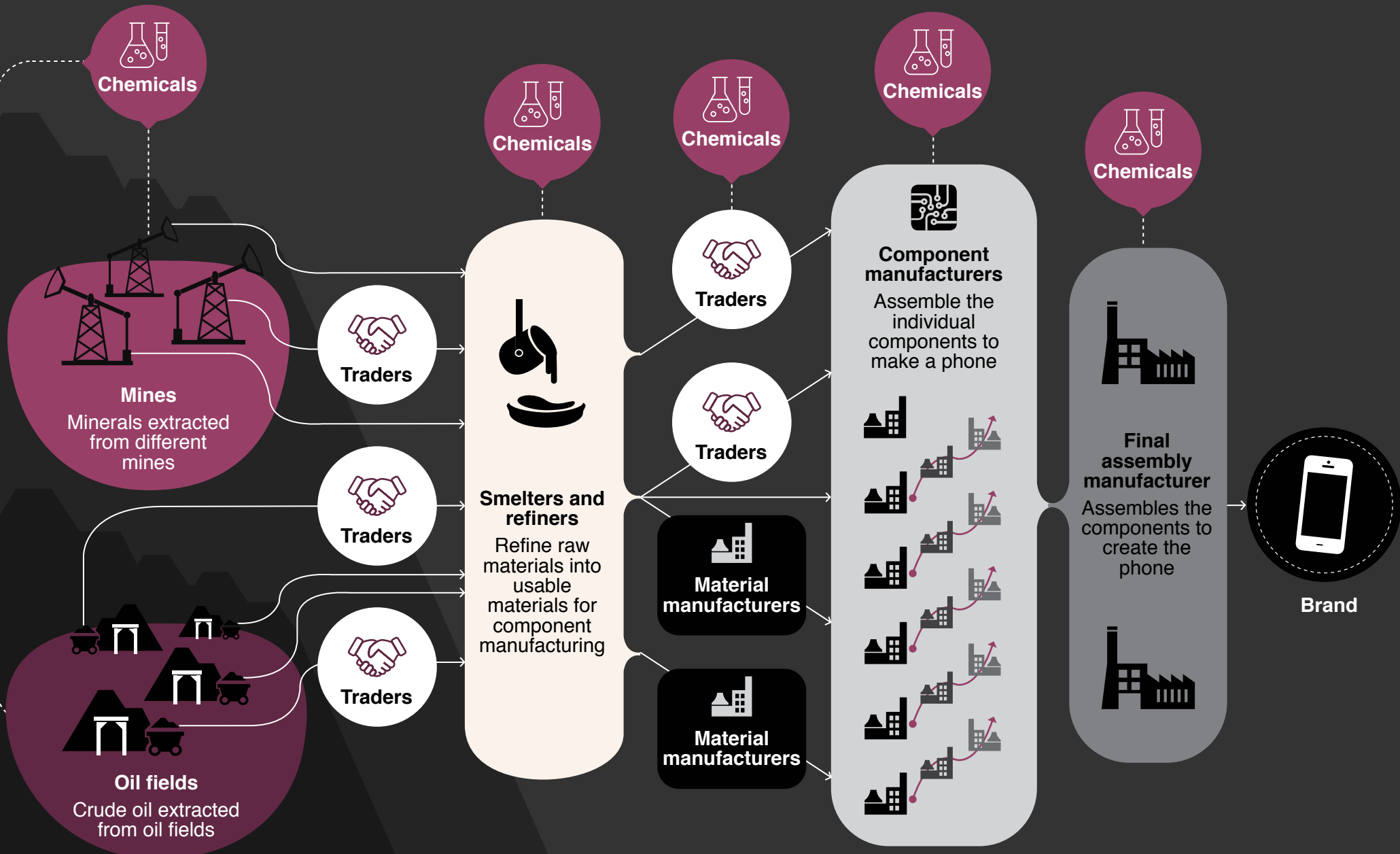
to chemicals with well-known hazardous effects. The laws in place to protect them are not sufficiently implemented and the women state that they work without appropriate protective equipment and safety instructions.

The workers describe severe effects on their health and the health of their unborn children; effects that to a large degree correspond with the known effects of the chemicals used in the processes. In fact, for the women interviewed in this study, cancer and miscarriages are so common that they have become the norm.

Swedwatch's research thus indicates that the human rights of the workers are severely impacted. Companies sourcing ICT components and products from the Philippines are linked to these impacts through their business relationships and must act to ensure respect for human rights in this context.

Chemicals appear at every stage of the supply chain

Figure 1



Source: adapted from *Toxic Tech*

‘I have had miscarriages. I never got cancer but several of my co-workers got ovarian cancer or breast cancer. I had two miscarriages and I know of another worker who had one, she eventually needed surgery on her ovaries.’

‘The products get made at the expense of our health. We suffer in silence because we need the job. If I complained I would be out of a job.’

‘We have seen the lists of these chemicals and know that they cause cancer.’

‘You will sometimes see female workers fainting or silently crying while at work.’

Factory workers

Acting in accordance with the United Nations Guiding Principles on Business and Human Rights (UNGPs), companies should initiate human rights due diligence (HRDD) to identify and assess the actual and potential human rights impacts they are linked to through their business relationships with suppliers and sub-suppliers in the Philippines. Considering that hazardous chemicals affect female and male workers differently, it is imperative that the HRDD process is gender sensitive. When properly informed about the risks and impacts companies should also, where necessary, conduct human rights impact assessments (HRIA) to understand the level of involvement in the situation and how best to proceed with the appropriate course of action.

Corporate actors in the EU will note that this is in line with the plans announced by the European Commissioner for Justice for EU legislation on mandatory corporate environmental and human rights due diligence. Echoing the UNGP, the purpose of such legislation will be to ensure that companies have processes in place to identify, prevent, mitigate, and account for human rights abuses and environmental damage linked to corporate operations, subsidiaries and value chains.

A key factor perpetuating human rights impacts in the ICT sector is lack of transparency. Production of the ICT products that we all use every day is dependent on an opaque and highly complex web of interlocking supply chains with considerable chemical hazards at practically every stage. This is why a company's HRDD process should be open and transparent – so that governments, other business actors and the public can access the relevant information and address the risks in the supply chains.

But even more importantly, workers in the sector have the right to be informed about of the risks in their workplace. Being informed about the chemicals used, their potential health impacts and the precautions workers must take to avoid such impacts, is crucial to preventing harm.

For workers to exercise their legal right to remove themselves from a dangerous situation they need to be informed of the risks. This right to information is a prerequisite to other human rights impacted by chemicals, including the right to decent work as well as the right to life and health for workers and their children.

Addressing the fact that workers are exposed to hazardous chemicals in the supply chains of ICT products is necessary to ensure respect for human rights in this context and is an essential step towards fulfilling several Sustainable Development Goals (SDGs).

The global ICT manufacturing sector has been hit hard by lockdowns following the covid pandemic – a development that is likely to impact workers in a number of ways. In the Philippines specifically it is also a well-known fact that the situation for human rights defenders, unions and other labour organisations is already extremely severe. No company sourcing devices and/or components from such a high-risk context can reasonably claim ignorance of the facts, be it regarding the risks inherent in exposure to hazardous chemicals or the human rights situation. Exporting lethal hazards along with production must never be an acceptable business practice.

‘I am the fourth woman on our production line to get cancer. I got breast cancer and the others got ovarian cancer. There was another woman who died, but I am not sure if it was cancer or not.’

Factory worker

Recommendations to companies sourcing ICT products or components from the Philippines or from other countries with a high risk of adverse human rights impacts related to hazardous chemicals:

- Actively work to ensure that no workers are exposed to hazardous chemicals throughout the supply chains. When possible, hazardous chemicals should be eliminated and/or substituted with a safer alternative. Replacement chemicals should be thoroughly tested for synergistic and cumulative effects, with an emphasis on how the chemicals affect female workers of child-bearing age. In this process the burden of proof should be on companies to prove that a chemical is safe – never on workers to prove that a disease is work related.

- Where elimination or substitution of hazardous chemicals is not possible, companies should demand that suppliers and sub-suppliers ensure worker protection from exposure either by isolating workers from the hazard, changing the way the work is performed or, as a last resort, by ensuring that workers are provided with, and are required to use, appropriate personal protective equipment (PPE).
- Require suppliers and sub-suppliers to ensure that workers have access to clear and easily understandable information regarding chemicals they are exposed to, allowing the workers to make informed choices regarding potentially hazardous exposure to chemicals at work, without fear of losing their jobs or suffering other negative consequences.

Recommendations to the government of the Philippines and to the governments of other countries with manufacturing of ICT components and/or products:

- Act to ensure that national Occupational Safety and Health (OSH) legislation is sufficiently enforced and offers adequate protection for workers. In the ICT sector specifically, the legislation should be implemented in a way that protects workers against the risks of exposure to hazardous chemicals, with a special focus on gender aspects.

Recommendations to legislators in the European Union (EU):

- Develop legislation that requires companies that import goods to the EU market to ensure effective safety precautions during the production to protect workers from hazardous chemicals. This could be part of a mandatory HRDD legislation or a separate legal instrument. An important element of this would be to ensure full disclosure regarding which safety precautions have been taken up in the manufacturing process of ICT products and components entering the EU market and throughout their entire supply chains.

Recommendations to contracting authorities within the EU:

- Include social criteria in public procurement processes and contracts for ICT products. Criteria should ensure that suppliers perform effective HRDD throughout supply chains of ICT products. Risks connected to workers' exposure to hazardous chemicals should be included.

‘When I was forced to resign, my body was finished. The company stole our youth and then they just dumped us. I felt old and sickly and weak. I was 32 years old.’

Factory worker



Further reading:

Hazardous chemicals in ICT manufacturing and the impacts on female workers in the Philippines

www.swedwatch.org/publication/report/ict-companies-must-act-to-protect-workers-from-chemical-exposure

Part 2.
Human rights
in electronics
manufacturing

7. Global foremen: the role of contract manufacturers in ICT hardware production

Author: Jeroen Merk (The University of Edinburgh)

Production processes have long been transnationalised in the electronics industry. Outsourcing has 'freed' brands like Apple or Dell from organizing their own production processes, thus helping to reduce costs and ultimately relieving them of the organizational requirements associated with mass labour processes. Contract manufacturers, in turn, specialise in organising mass production processes and take on the task of controlling large workforces. Although contract manufacturers remain largely invisible to the consuming public, but they have emerged as large multinational corporations themselves over the last two decades. These firms not only play a key role in the electronics supply chain but also employ most of the workers in the industry. This chapter first deals with two key protagonists in the electronics industry: Apple and Hon Hai Precision (also known as Foxconn). We will briefly introduce the two companies and discuss the differences between them. In section two, we will provide more details on the role that contract manufacturers play in the electronics sector supply chain. Here we detail ten characteristics that these manufacturers share.¹

1. The tale of two companies

Apple

Apple was founded in 1976 in a California garage, and has since grown into the world's largest electronics brand. Its main activities are the designing, development and selling of consumer products like the famous iPhone, MacBook, and iPad. In addition, Apple provides a number of services that run on its devices, like its App store, iCloud, iBook, Apple Pay, etc.

Apple is today the world's largest corporation with a revenue of US\$260.17 billion and a net profit of US\$59 billion in 2019, which is about three times the profits earned by Intel and almost 14 times the profit of its main supplier, Hon Hai (see figure 1). Between 2011–2018, Apple has ranked either first or second on the BrandZ Top 100 Most

Valuable Global Brand list. Much of Apple's success hinges on selling different types of iPhones, which represents over 50% of its revenue. The introduction of the iPhone in 2007 radically transformed the mobile phone market by incorporating information and communication technologies into a single product (see figure 1). Its launch also sounded the death knell for once famous handphone brands like Nokia, Ericsson and Blackberry, which, at the time, dominated the handset market with a 49% share (compared to Apple's 3% at the time).

Apple's dominance in the spaces of consumption is due to its capacity to capture the symbolic, affective, image-driven, and informational aspects associated

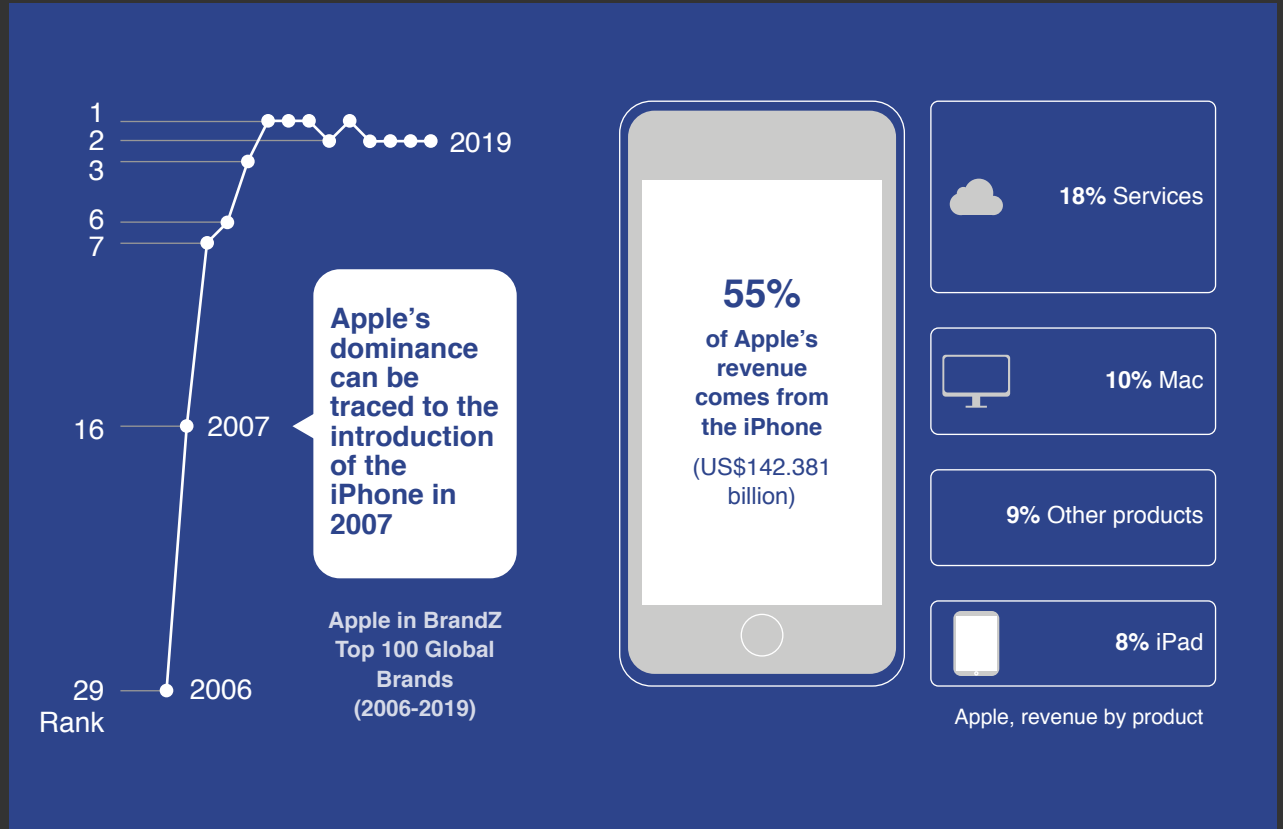
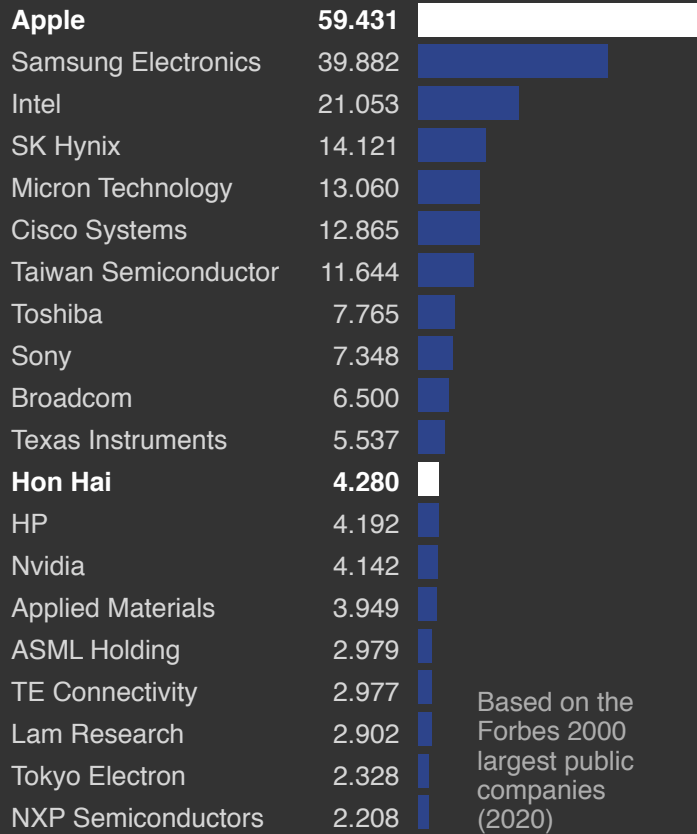
with its merchandise. It utilises a range of techniques to spur demand for its products, for example, by investing heavily in corporate identity, signs, logos and brand narratives via advertising, marketing and promotion. Marketing, design, advertising and public relations are the main instruments that Apple uses to sell intangible values it wants the – often very tangible – products to be associated with. The ICT hardware and key components that go into its products such as screens, hard drives, memory, camera modules and so on, are sourced from many different firms before they are assembled by contract manufacturers like Hon Hai.

Apple is the world's most valuable public trading company (2020)

Figure 1

20 largest transnational corporation in electronics (2019)

Profit (US\$ billion)



Apple
US\$261.705 bn, 2019 sales
 almost three times its nearest competitor

Dell

HP

Legend holding

Lenovo

Nine other companies

Based on the Forbes 2000 largest public companies (2020)

Computer hardware

Hon Hai

Hon Hai is the world's largest contract manufacturer. It is headquartered in Tucheng, New Taipei City, Taiwan. Terry Gou founded the company in 1974 as Hon Hai Plastics Corporation, later renamed Hon Hai Precision and today better known by its trade name Foxconn (in this document, we refer to Hon Hai). Whereas Apple is very visible to end-consumers through advertising and marketing, Hon Hai operates in the shadows of the global supply chain.² It derives its strength from its capacity to cut costs through mass production. While Apple dominates the spaces of consumption, the world's largest contract manufacturer Hon Hai Precision dominates the spaces of production. The company is 123rd on the 2019 *Forbes* list of 2000 largest public companies. It is much larger than its competition. Pegatron, its closest competitor in the contract manufacturing sector is ranked at no. 1200. Its revenue of over US\$143bn is over three times as much as Pegatron, the world's number two contract manufacturer. In terms of profit, Foxconn was ranked no. 12 in 2019, when it booked US\$4.28bn, surpassing the profits

of many of its branded customers, including HP, Xiaomi and Panasonic. However, it is still dwarfed by Apple's profits, which are 14 times larger at US\$59.431bn (see figure 1).

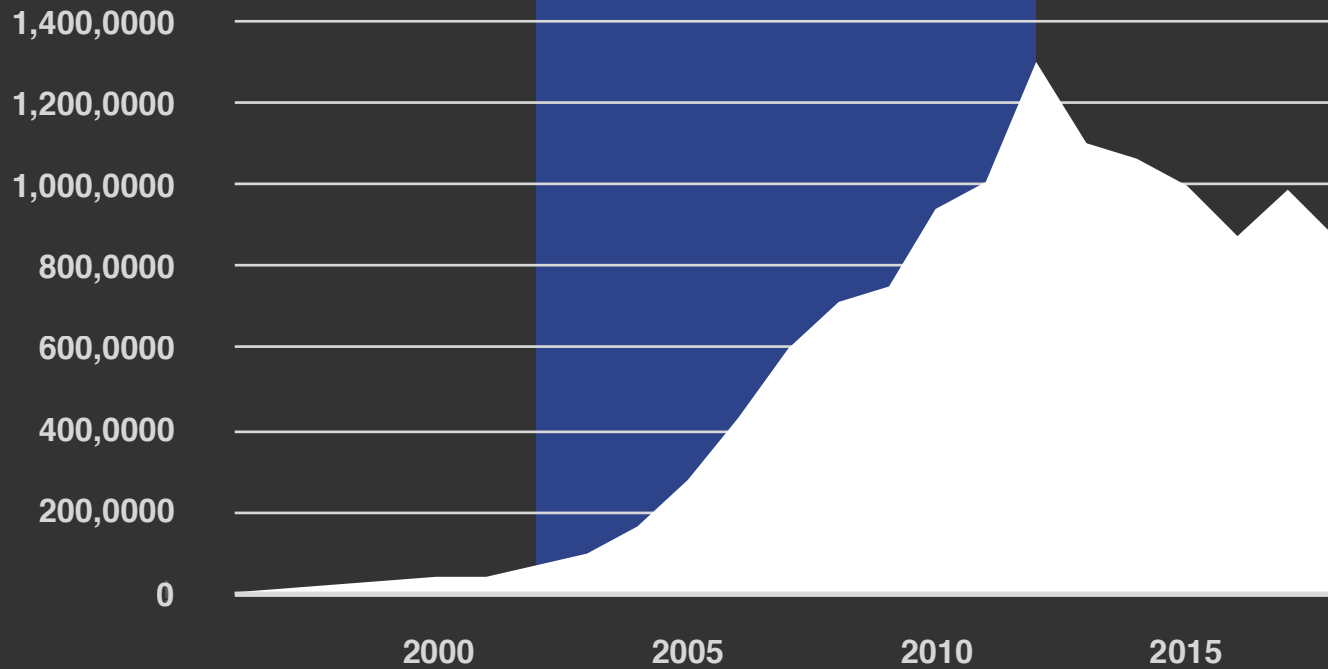
Apple is Hon Hai's largest client, accounting for approximately 50-55% of its total revenues. This share has been fairly stable since 2011, although prior to the launch of the iPhone, in 2007, Apple's share was only 16%.³ Other large clients of Hon Hai include Amazon, Cisco, Dell, Ericsson, IBM, LG, Lenovo, Nintendo, Nokia, Oppo, Sony, Toshiba and Xiaomi. With this portfolio of brand names, many of the products assembled by Hon Hai are familiar consumer items, including the iPhone, iPad, Xbox, Amazon's Kindle and Sony's LCD TVs. However, the company also produces a large variety of (hidden) components such as metal and plastic casings, LCD panels, speakers, flexible printed circuit boards, chassis keyboards, adaptors, IC sockets, cables, connectors and many other components that go into various electronic devices. For the iPhone, for instance, Hon Hai's factories and subsidiaries supply Apple with flexible

printed circuit boards, metal casings, cover glass, adaptors, touch panels, and camera modules. These components provide a higher margin compared to assembling alone.

Through this process of vertical integration, often through mergers and acquisitions, the company seeks to increase its share of the hardware component segment. In more recent years, the company has been moving towards more capital- and knowledge-intensive segments of the electronics supply chain by integrating backwards into developing its own semiconductor supply chain by acquiring the chip design firm (Socle Technology) and building plants for semiconductor packaging and testing. This opens up new business prospects for the development of activities related to the latest technological developments, such as the cloud computing market (e.g., datacentres, servers), where Hon Hai is active via its partnerships with NEC and HP, or activities related to IoT and AI products, robotics and machine vision.

Figure 2

Worker numbers at Hon Hai increased significantly between 2003 and 2012



Apple is Hon Hai's main client, representing over 50% of total revenues.

However, Hon Hai also produces for Dell, Cisco, Nokia, Amazon, Sony, Xiaomi, Nokia, Oppo, Huawei and many other electronics brands.

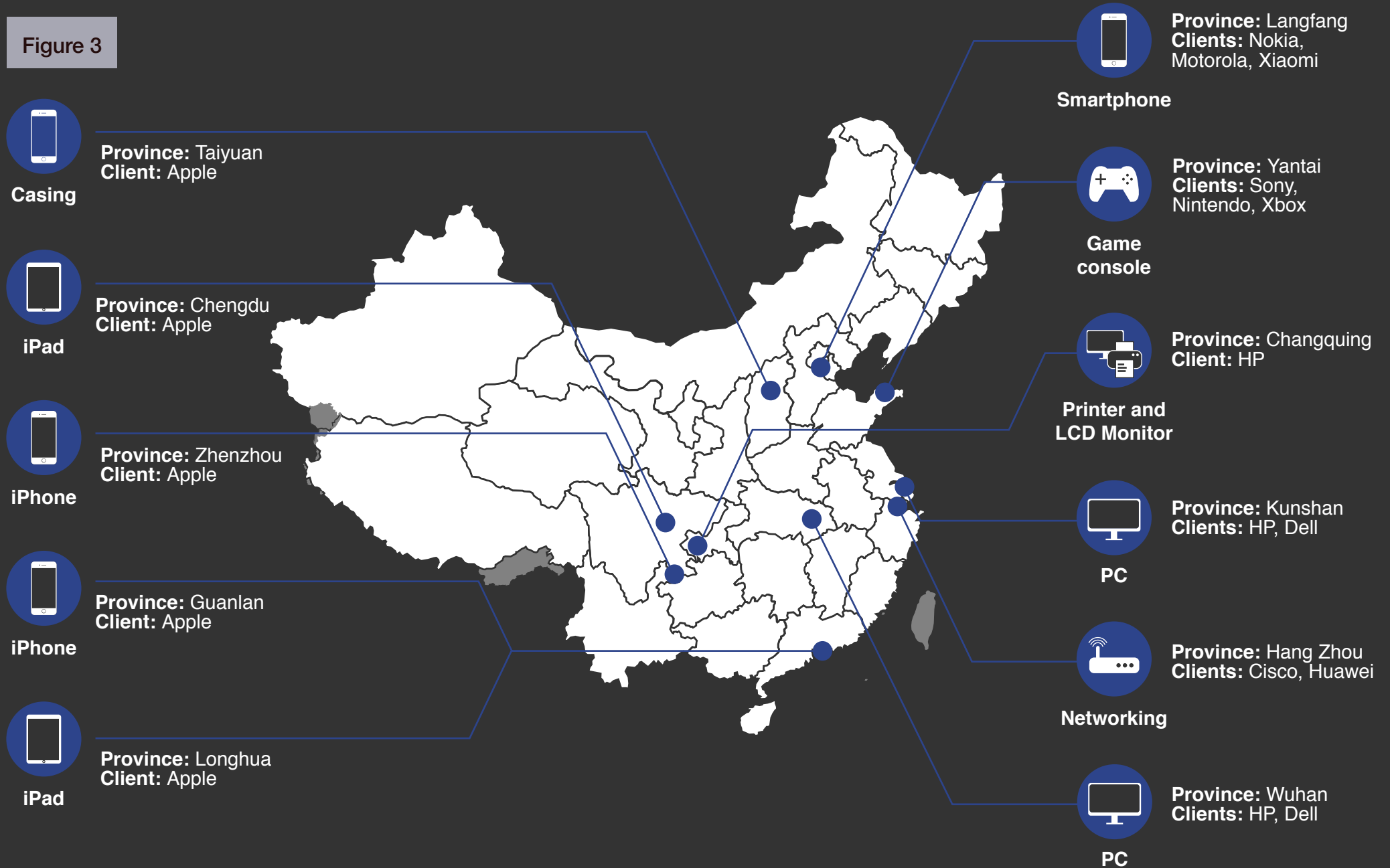
Hon Hai's growth in the late 1990s and the first decade of the 21st century is extraordinary. Although headquartered in Taiwan, most of Hon Hai's workforce is located overseas, with a large majority of it located in China. Its workforce grew from a rather modest 9,000 in 1996 to 1.3 million in 2012, turning it into one of China's largest private employers and the world's largest manufacturer (see figure 2).

Most of Hon Hai's production capacity is based in China, where it established a foothold in 1988 (see figure 3). The company has taken advantage of the inexpensive supply of rural migrant labour, and has benefited enormously from business-friendly incentives provided by the Chinese government.⁴ Although the company grew throughout the 1980 and 1990s; its integration into global value chains rapidly accelerated after 2001, when China entered the World Trade Organization and Hon Hai became Apple's designated supplier for the assembling of its MacBook.

By 2002, Hon Hai had become China's number one exporter of electronics, but it was the launch of the overwhelmingly successful iPhone in 2007 and iPad in 2010 that 'turbo-charged' its growth.⁵ During this time, the company began building mega-factories that employ hundreds of thousands of workers. Increased labour costs led to a restructuring within China and today most iPhone production takes place in Zhengzhou, Henan Province, where wages are much lower compared to coastal regions. Hon Hai might be at the brink of yet another round of spatial restructuring, whereby the focus will be outside China in order to escape higher tariffs for products exported to the US – a result of the escalating trade war between Washington and Beijing. Pegatron, another supplier of iPhones has already established production sites in Indonesia, Vietnam and India.

Hon Hai: Main factory sites in China (2014)

Figure 3



Source: company data (various years)

Rising labour costs, labour shortages and trade tensions with the US have been undermining China's cost advantages over the last few years. However, China remains the world's most important centre for ICT hardware manufacturing by far (see figure 4). In 2015, China accounted for 42% of total global electronic hardware production.⁶ Southeast Asia as a whole, including China, is estimated to account for 69% of its assembling operations.⁷ However, trade tensions between China and the US have led many lead firms, including Apple, HP, and Dell, to at least partly relocate production processes outside of China. This dominance is clearly reflected when we observe Apple's 2019 supplier list,⁸ which catalogues their 200 most important suppliers based on spending. Forty-seven percent of Apple's suppliers are based in China, which underlines how much it remains the linchpin of Apple's supply chain. This is a slightly higher than 2013, when 44% of manufacturing took place in China. However, the percentage of Chinese

headquartered suppliers increased from 12% to 21% during the same period, which suggest a growing integration of Chinese producers within Apple supply chain. These are mostly producers of components, such as acoustic (speaker, receiver), haptic, cover glass, wireless charging module, connectors and cables, and battery modules. Hon Hai serves Apple from 35 different facilities and five different countries (Brazil, China, India,

Vietnam and the US), however, 29 of them are based in China (see figure 5). Apple has tried to diversify iPhone and iPad assembling orders towards Pegatron and Wistron (both of which operate mostly in China), especially after 2010–2012 when Hon Hai was a centre of negative press attention after a string of worker suicides at its Chinese mega-factories producing Apple products.

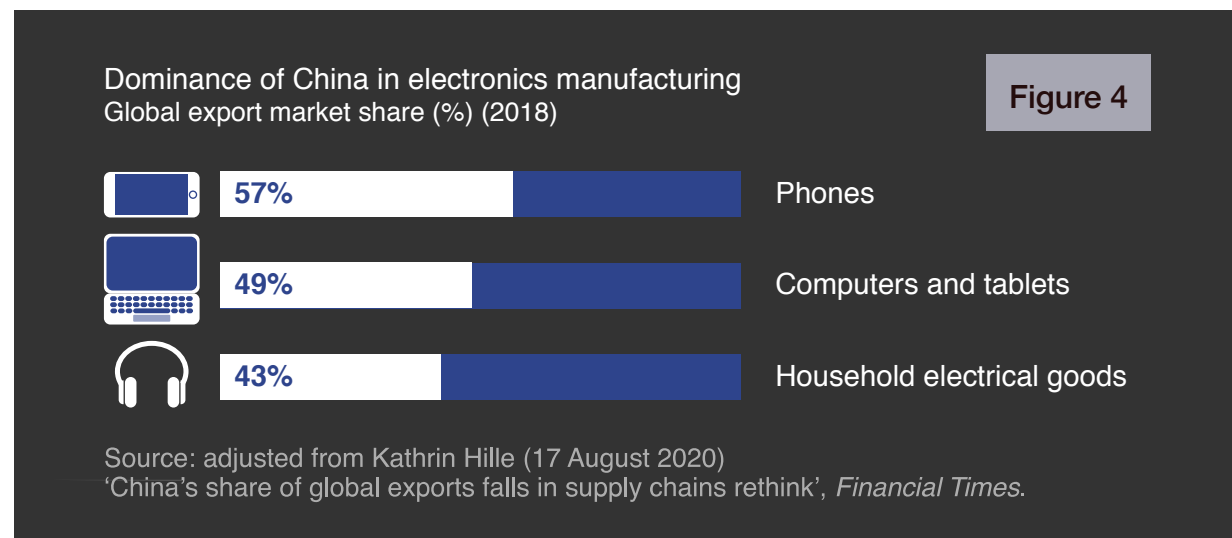
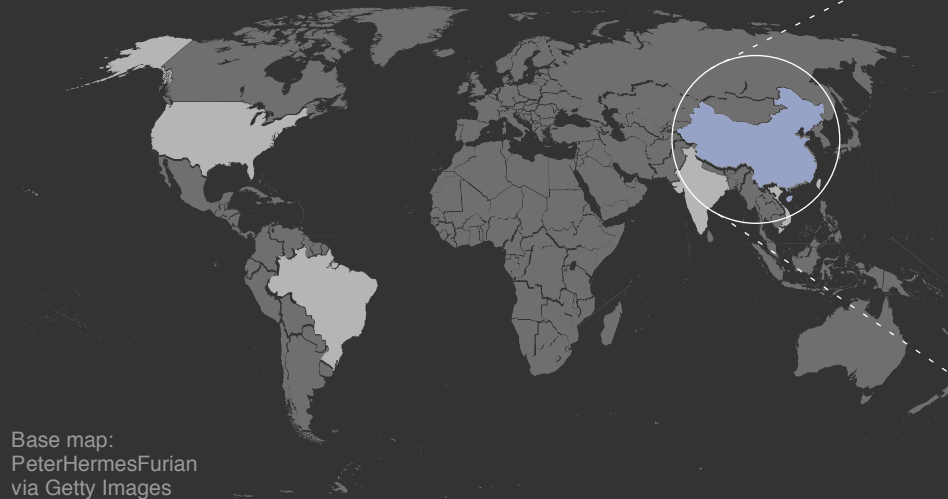


Figure 4

In 2018, Hon Hai had 35 supplier locations servicing Apple from Taiwan, China, India, Brazil, Vietnam and the United States.

29 of them are located in China.

Figure 5

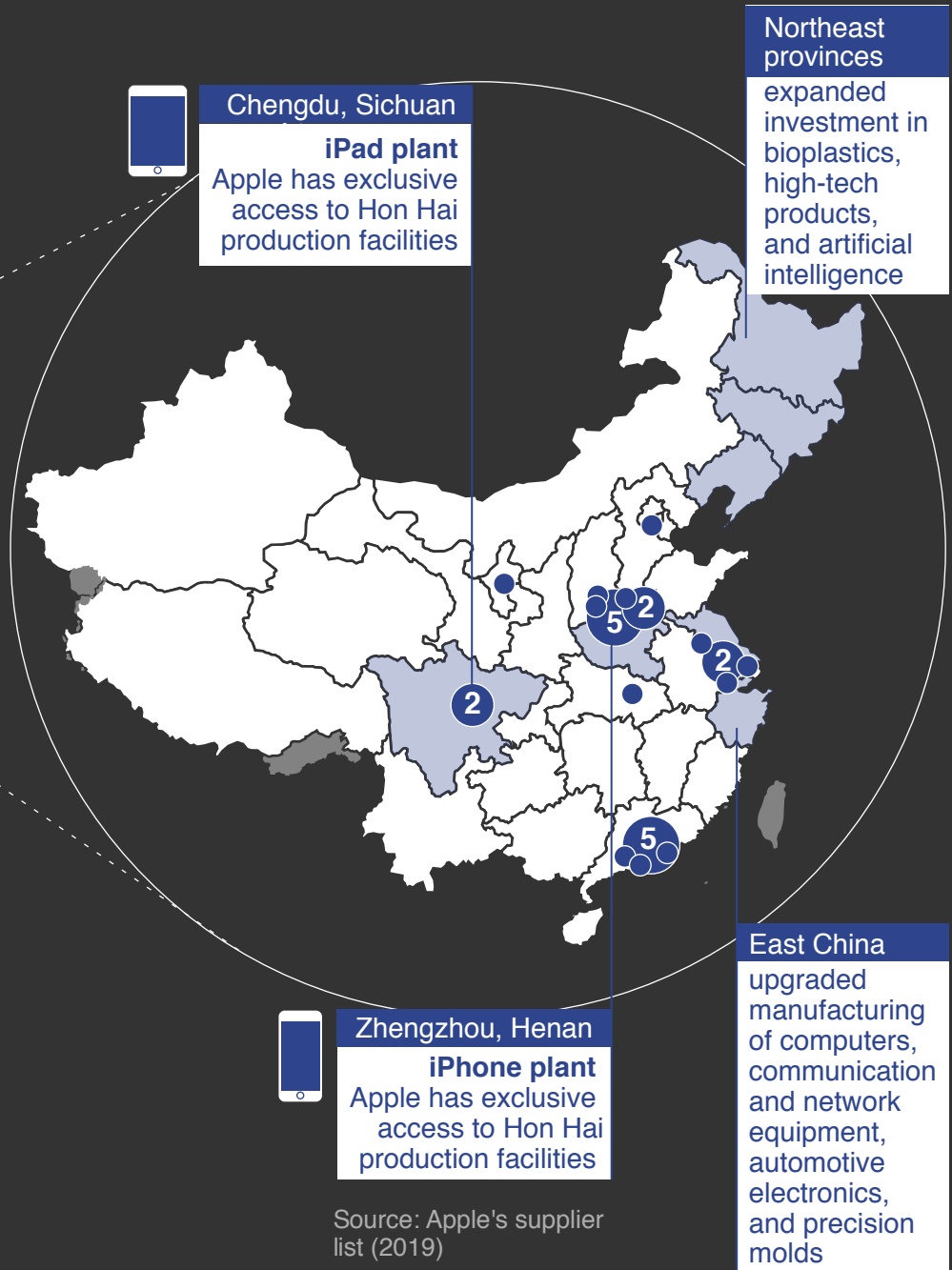


Base map:
PeterHermesFurian
via Getty Images



Overall, 47%
of Apple's suppliers
are based in China

Apple supplier list (2018)



Source: Apple's supplier list (2019)

2. Contract manufacturers

Hon Hai is the world's largest contract manufacturer but of course many contractors are active in the industry. Supply chains are, by definition, made up of 'dissimilar firms', each of them concentrating on different activities in the production and circulation process. In the area of ICT hardware production, a distinction is typically made between branded companies, on the one hand, and contract manufacturers, that usually remain hidden to the public',⁹ on the other.

Branded companies design, market and sell finished goods, such as Apple's iPhone or Microsoft's Xbox, for example. These firms are known as original brand manufacturer (OBM). They organize global production network without owning factories. A second category of brands are companies that design and produce specialised high-tech parts, referred to as original equipment manufacturers (OEM). A famous example here are the microchips designed and fabricated by Intel or Qualcomm. Whereas most American and European brands long rely on outsourcing as a mechanism to reduce per unit production costs,

South Korean and Japanese brands still operate their own factories. Leading examples of such vertically integrated firms include Samsung, LG, Lenovo and Panasonic. The majority, however, has long discarded mass manufacturing, although keeping close control over the supply chain. Although figures are hard to find, experts estimate that around 70% of production is outsourced.¹⁰ This model is sometimes referred to as 'concentration without centralization' as brand-named corporations or 'lead firms' like Apple retain control over decentralised supply chains without actually owning production facilities.¹¹ For example, lead firms select the material and component suppliers for the contract manufacturer and 'negotiate the prices at forecast demand'.¹²

The literature typically distinguishes here between two types of contract manufacturers: First there are the electronics manufacturing services (EMS) firms, which are responsible for organising the process of assembling components and/or final products. EMS firms also play an important role in prototyping, logistics (including tracking technologies), inventory management, packaging and export

processing. These firms manage a large flow of raw materials and components on behalf of their clients, who, in turn, benefit from shorter turnover times, smaller inventories and lower labour costs. The second group of contractors is referred to as original design manufacturers (ODM). These firms are basically involved in the same activities as EMS firms but also closely collaborate with their branded customers in the design and technical development of the product. This dual involvement in developing the product reduces the time it takes to develop, design and manufacture a product. It must be noted that the boundaries between both types of contract manufacturers is pretty fluid and often difficult to draw.¹³ Actually, the same company may have different roles: for instance, Hon Hai can be an EMS firm for one client (Apple) and an ODM for another (HP). In practice, the EMS and ODM firms are more similar than they are different. The EMS/ODM market is worth US\$500bn. Figure 6 shows the ten largest firms in this segment.

a. One-stop-shop

Contract manufacturers not only focus on the labour-intensive moments of the electronics production process but also on the management of complex, spatially stretched-out supply chains on behalf of their clients. They are sometimes described as ‘global supply chain facilitators’.¹⁴ Hence, their role goes ‘far beyond the use of outside suppliers for component or part manufacturing’, Boy Lüthje and collaborators write,¹⁵ instead, these companies provide a range of services to their branded customers, including raw material acquisition, component purchasing, inventory management, process engineering, board layout, automated assembly of printed circuit boards, configuration of end-production like computers and mobile phones (box-build), testing and quality control, and, finally, activities associated with packaging, shipping and after sale services. These contract manufacturers thus operate as ‘turn-key producers’ which provide a ‘one-stop-shop’ for companies like Apple that have little, or no, in-house production capacity.¹⁶

The world’s 10 largest EMS/ODM firms

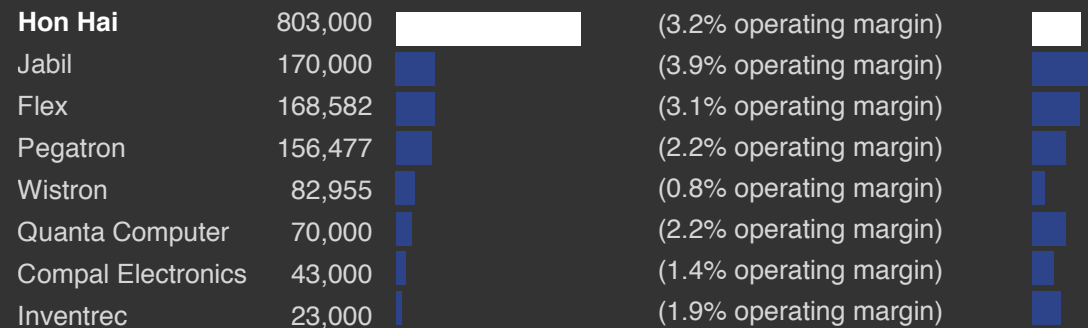
By revenue (US\$ billion)



*Part of Hon Hai group | Source: company reports 2016

Number of workers and operating margins

EMS/ODM firms



Source for number of workers: corporate data
Source for operating margins: annual reports 2017

Figure 6

b. Taiwanese capital

It is specifically Taiwanese contract manufacturers that have specialised in the low-mix/high-volume production of mass ICT consumer products, like smartphones, PCs and notebooks. Over time, several of them turned into large transnational corporations. Ten of the world's 15 largest EMS/ODM firms are Taiwanese, which combined represent approximately 80% of the EMS/ODM market. Although the popularity of outsourcing ever-larger aspects of the production process goes back to the 1980s when IBM, among other firms, started to eliminate in-house production; the emergence of this type of contract manufacturers is also closely associated with China's transformation into the 'factory of the world'. In the early 2000s, these manufacturers established mega-factories – employing thousands of workers – in China's Pearl River Delta and Yangtze River Delta regions.¹⁷ During this period, contractors quickly expanded their businesses by offering 'electronic manufacturing services' that could save their branded clients up to 75% on labour costs.¹⁸

The proximity of Taiwanese contractors to mainland China meant that they were

much better equipped to tap the massive labour reserves compared to their competitors in other countries. In addition, these manufacturers had fewer linguistic, ethnic and cultural barriers to overcome, while family ties and political connections also played out favourably for them. Around 2010, Hon Hai and other contract manufacturers moved much of their mass production capacity to China's inland provinces – iPhone production moved to Zhengzhou and iPad production to Chengdu, where labour costs were about 20-30% lower compared to the factories located in the coastal regions,¹⁹ the new plants were also more automated compared to the earlier ones. At the same time, as a result of various tax holidays and other favourable policies in these new regions, the firm's effective tax rate dropped from 25% in 2011 to 18% in 2013.²⁰

In 2021, contract manufacturers continue to remain heavily dependent on China. For example, Hon Hai's Chinese-based factories still account for approximately 70% of its production capacity. However, increased labour costs and ongoing geopolitical

tensions between Washington and Beijing means that many contractors have already started relocating factories or have made plans to do so in the near future. For example, Wistron has been expanding its iPhone assembly lines in India; Pegatron has invested in a large production site in Batam, Indonesia; and Compal has been planning to move parts of its production facilities to Vietnam. Other countries in the region such as the Philippines and Thailand also benefit from new EMS investments in high volume IT manufacturing, given the availability of large labour forces and low wages. Meanwhile, Malaysia has attracted semiconductor equipment manufacturers, while the high-tech hub of Singapore has attracted some of the more advanced businesses, such as microprocessor production. More sensitive products, like high-end servers and communication equipment, have tended to move back to Taiwan or closer to end-markets, such as Mexico.

c. Consolidation

Non-Taiwanese contractors

There are, of course, contractors from countries other than Taiwan. Jabil and Flex are two very large contract manufacturers from the US. Other (relatively) large contract manufacturers in North America and Europe, although none of them made the Forbes 2000 list, include Celestica, Plexus, Benchmark, PKC Group, or Zollner Elektronik. Unlike their Taiwanese competitors, these firms tend to concentrate on higher-mix/lower-volume manufacturing, whose customers are typically active in the medical and auto industries where operating margins are higher than in the consumer electronics segment. These companies position themselves with better technology and operate more complex assemblies.

The EMS/ODM segment is highly consolidated. Hon Hai alone accounts for approximately 40% of the EMS segment, while a handful of companies associated with the ODM segment – Quanta, Compal, Pegatron, Wistron and Inventec – account for over 90% of global notebook production, up from only 27% in 1995.²¹ Thus, the long-term trend of the consolidation of OBM and OEM firms is mirrored by the consolidation of mass manufacturing into a small group of contract manufacturers typically, as we have seen, from Taiwanese origin. In other words, the reason why contract manufacturers expanded so quickly in the 1990s and 2000s was because brand-name holders decided to externalize more and more manufacturing activities they traditionally performed ‘in house’.²² Lee and Lim write:

‘As the OEM segment became more concentrated, EMS firms, needed to match the scale and speed of production required by big brands buyers, and they sought economies of scale by acquiring other EMS firms and existing OEMS.’

Mobile Asia: Capitalisms, Value Chain and Mobile Telecommunication in Asia²³

Brands' top three suppliers

Brand	Top three suppliers
Apple	Hon Hai, Pegatron, Quanta
Samsung	Samsung E-M, TDK, Tech Data Corp
General Electric	Jabil, Plexus, Flex
IBM	Hon Hai, Celestica, Sanmina
Sony	Hon Hai, Jabil, Pegatron
Hewlett Packard	Hon Hai, Inventec, Jabil
Cisco	Hon Hai, Celestica, Flex
HP Inc	Hon Hai, Inventec, Compal
Lenovo	Hon Hai, Flex, Wistron
Asustek	Pegatron, Quanta, Wistron

Vertical reintegration and scale offer contract manufacturers an opportunity to offset the very small operating margins (see figure 6 and point f);²⁴ it also offers increased possibilities for saving on the coordination and implementation costs while assuming more control over product quality and reliability. Successful manufacturers squeeze their weaker competitors out of the market or simply purchase them, which results into a further vertical reintegration of production resources “at the bottom” of global production networks’.²⁵ At the same time, the tendency to concentrate ever larger parts of global production at mega-factories is not restricted to electronics; similar developments have also been observed in other industrial sectors, such as the garment and athletic footwear sectors.²⁶

Figure 7

d. No access to end-consumer markets

Fourthly, as contractors, they have little access to final consumer markets, which remains firmly controlled by the lead firms in the industry. Only a few contract manufacturers, such as Acer or HTC, have successfully created their own brand spin-offs. Hence, it seems that, as Pawlicki argues, the contract manufacturing model has a built-in glass ceiling as EMS and ODM companies cannot venture into the profitable area of their own brand-name products without losing their manufacturing customers.¹²⁸ At the same time, by concentrating on mass assembly, contractors avoid potential conflicts with their branded customers, which results

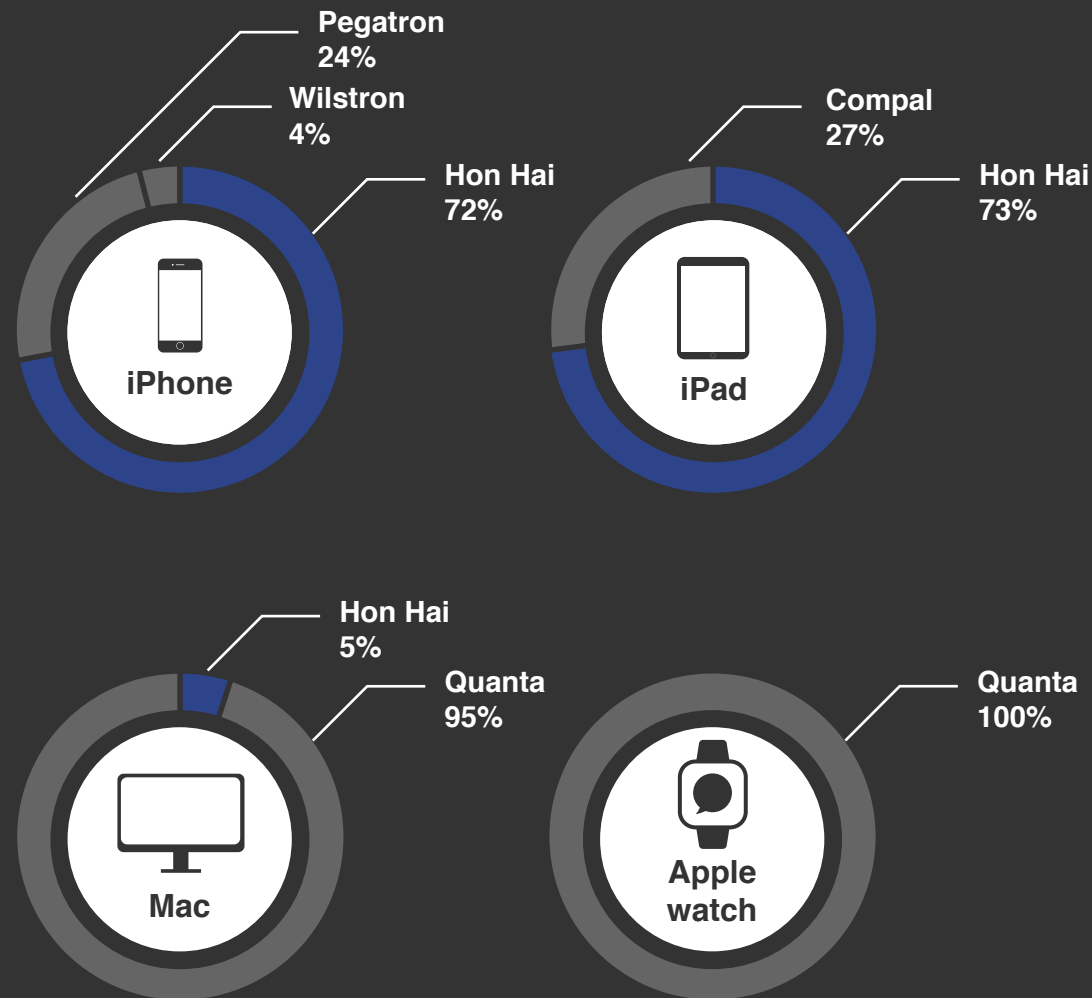
in long-term relations. Although many contractors have succeeded in expanding their business operations in many ways, including the production of ever more sophisticated products, developing strong mechanical design and tooling capabilities that would speed-up the process from design to manufacturing, or through vertical re-integration, these firms still exercise little control over the spaces of consumption. Thus, despite the fact that contract manufacturers operate as 'global supply chain facilitators' (see point a), the lack of brand name power turn them into 'secondary flagships'.¹²⁹

e. High client concentration

A fifth characteristic is that these contract manufacturers remain firmly embedded in the production network of a small group of global ICT leading brands: their top client typically represents over 50% of their revenues. By employing a decentralised, multi-tier supplier network, the branded or sourcing company not only spreads the risks but also enables it to enforce price-competitiveness and flexible advantage between various suppliers offering similar production capacities. With no access to end-markets and high levels of competition, the supplier often has no other choice but to accept the terms set by the buyer. Another advantage for brand is that a multi-tier supplier network provides them with more supply chain stability. If problems at one supplier emerge, the brands can shift orders to another contractor.

Apple allocation by Taiwanese contractor

Main hardware products (2016)



Often, however, relations between contractors and brands are long term as the introduction of new products not only require 'heavy investment in specific machines, factory layouts, worker training and engineering [but also] development of a fluid understanding between EMS and Brand Name project management teams.'²⁷ In many cases, branded companies can only choose from a handful of contractors, while shifting costs can be high. For example, although Apple has tried to diversify production away from Hon Hai, so far at least, these attempts have only been partly successful. Hon Hai still maintains 70% of two of Apple's flagship products, the iPhone and iPad (see figure 8). The percentage of product allocation to Hon Hai fluctuates slightly on a year-to-year basis but, so far at least, few suppliers can match the volume, time-to-market speed, quality control and prices that Hon Hai offers.

Figure 8

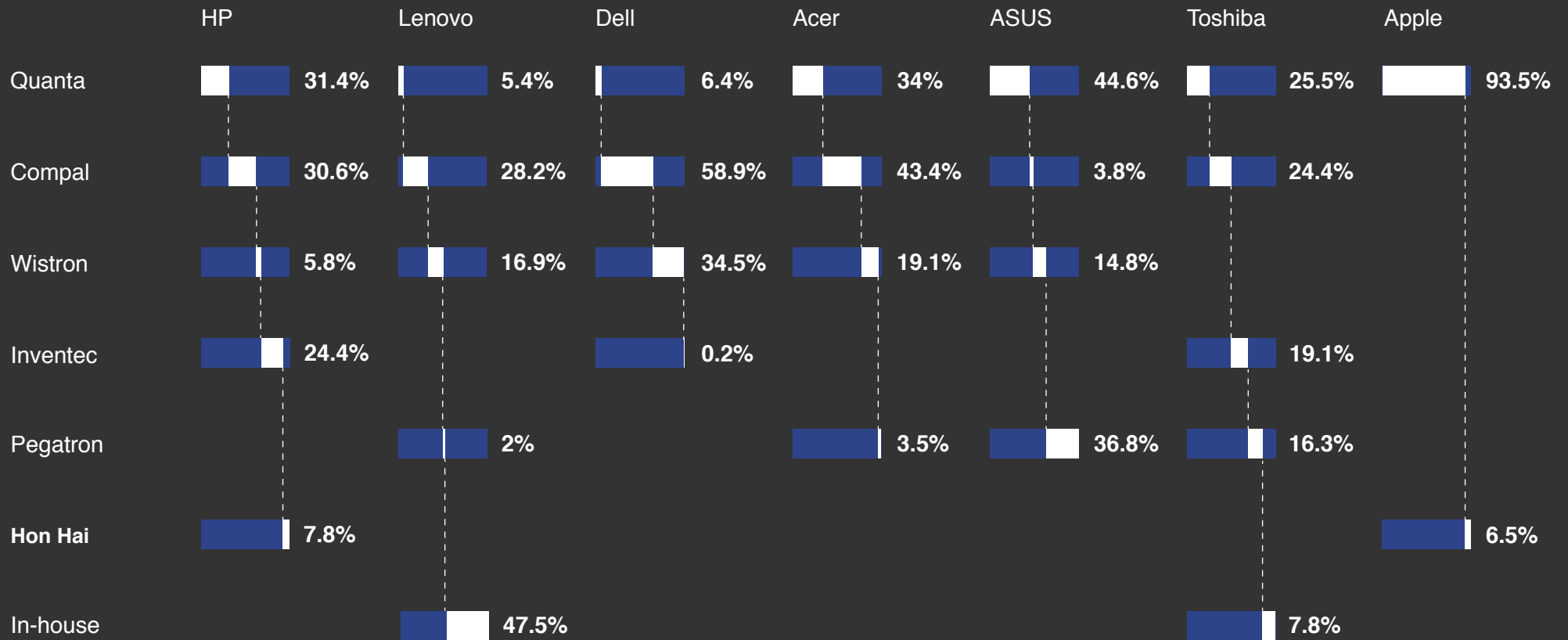
Apple's sourcing strategy is not unique, although it uses fewer contract manufacturers compared to other brands. As figure 9 shows, brands leverage a small number of Taiwanese contract manufacturers to assemble their electronic devices. Only Lenovo and Toshiba still partly produce notebooks in-house.



Apple store in Beijing. Photo: Jenny Chan

Approximately 90% of notebooks are assembled by Taiwanese contractors

Most of the assembling takes place in China. Only Lenovo and Toshiba still produce notebooks partly in-house.



f. Profit squeeze

Low profit margins are another common characteristic of Taiwanese contract manufacturers. For some, the consolidation of production to a small group of manufacturers challenges the notion of 'powerless' suppliers.³⁰ And it is certainly true that several of them, especially Hon Hai, have turned into very large transnational corporations. It would certainly be difficult for Apple to replace Hon Hai on short notice because few candidate contractors, if any, would be able to produce its products on the scale of and as cheaply and flexibly (quickly) as Hon Hai. Other brands also pretty much depend on a small group of – mostly Taiwanese – contractors for the vast majority of their merchandise.

While the power balance between brands and contractors fluctuates, it is probably fair to say that many contractors still find themselves in a rather dependent position, whereby they often have little choice but to accept the terms set by the lead firm. In the end, contract manufacturers 'compete for work from the brands.'³¹ Branded firms typically have more bargaining power. Their sourcing strategies are designed to prevent suppliers from obtaining too much bargaining power. One indication are the razor-thin margins that contract manufacturers operate under.

In 2017, the world's seven largest EMS/ODM firms had gross margins of between only 0.8% and 3.2% (see figure 6 and figure 10). By contrast, Apple's gross margins amounted to around 38%. This illustrates how successfully Apple – by controlling the more profitable segments in the supply chain, such as design, software development, marketing – continues to capture most of the surplus value created. And Apple is no exception. As Peter Pawlicki writes:

[c]omparing gross profit margins between contract manufacturers and lead firms confirms that the latter are the beneficiaries of the disintegration between product innovation and manufacturing.³²

One senior consultant in the industry argues that this imbalance can be explained by the ‘oversupply of EMS capacity [as well as] the desire by EMS providers to secure patronage from leading consumer brands – both to fill their worldwide factories, as well as providing flagship banners to attract further business.’³³ However, within this fiercely competitive supply chain, establishing the drive to push production costs down is of paramount importance for contract manufacturers.

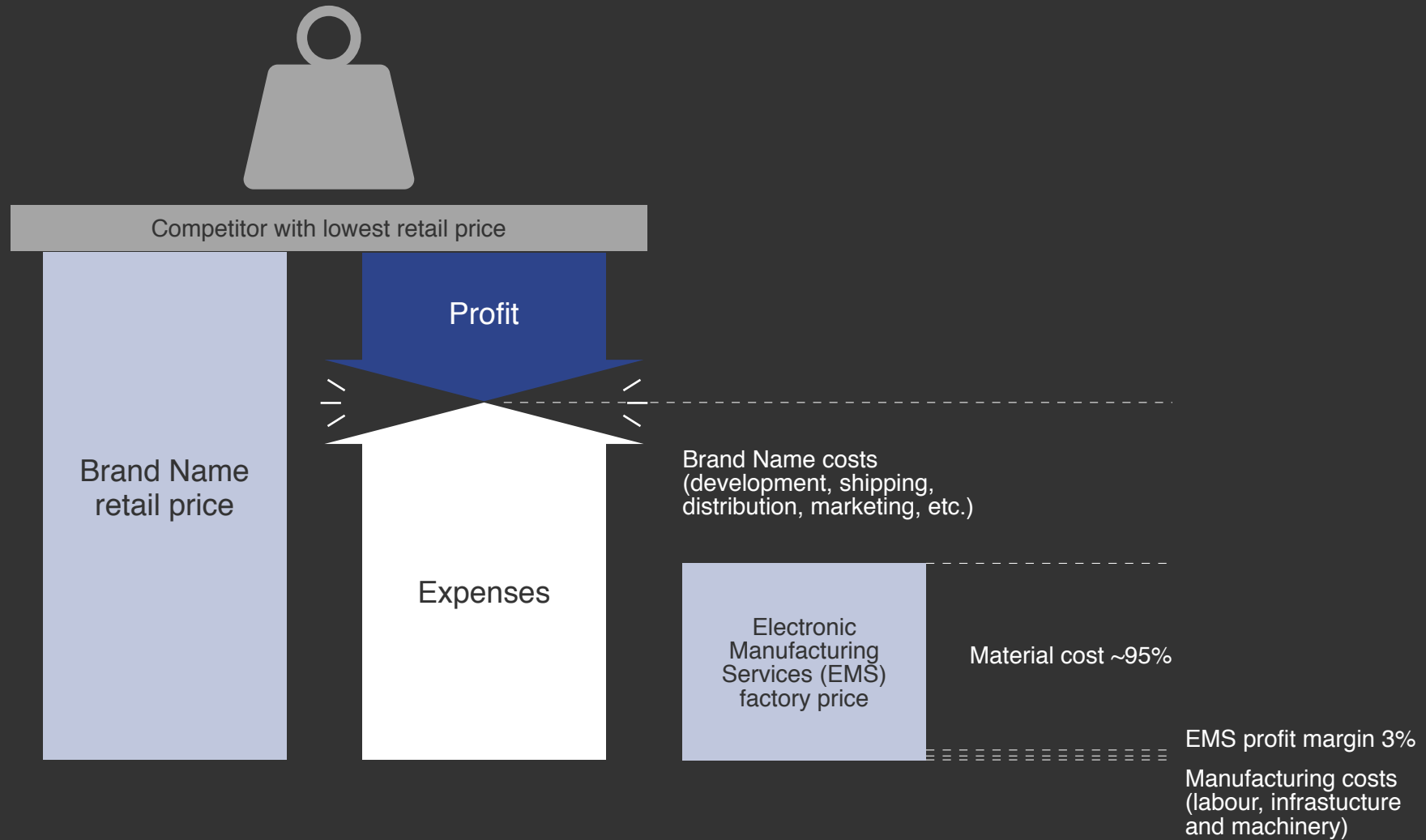
Their business model relies on applying a strategy of ‘low-cost, suppressed labour-rights competitiveness,’³⁴ to counter, as Anthony Harris argues, the ‘intense pressure from Brand Names to squeeze down factory prices, sometimes to the extent of

offering products under cost price simply to get the business.’³⁵ The contractors’ focus is predominantly on organising mass assembling operations and keeping the cost of labour as low as possible. While direct labour costs of the contract manufacturers represent only 2% of the final contractors’ selling price, labour costs account for ‘upwards [of] 40% of the [contractors] manufacturing costs.’³⁶ Hence, Harris concludes: ‘Since around 95% of a smart phone/tablet is material costs, and material suppliers are decided by the Brand Names with strictly controlled prices, a squeeze on manufacturing costs essentially means a squeeze on labour, as well as manufacturing “efficiency”.’³⁷ Figure 10 summarises the cost and profit margin relationship between brands and contract manufacturers.

Selling prices, expenses and profit margins are the result of competing pressures

Figure 10

While direct labour costs of the contract manufacturers represents only 2% of the final contractors' selling price, labour costs account for 'upwards [of] 40% of the [contractors'] manufacturing costs.' (Harris)



g. Global foremen

Contract manufacturers have lifted geographical barriers to accessing the world's cheap labour reserves for lead firms in the electronics industry. Hon Hai is the world's most successful example of a manufacturer that applies a strategy of 'low-cost, suppressed labour-rights competitiveness,'³⁸ whereby it serves 'as the foreman responsible for rounding up the workers and getting them to work.'³⁹ Outsourcing provides brands with an escape from the burdensome task of organising mass labour processes and, hence, an escape from the issue of working-class agency and the associated problem of labour control. In fact, it leaves the task of organising mass production and potential workers' opposition to contractors near the cheap labour pools and – in most cases – authoritarian and repressive states.

While lead firms control in detail what goes on in their supply chains, the command over mass labour is outsourced to companies like Hon Hai, Pegatron, Quanta, and Compal. These companies organise the mass production processes on behalf of 'absentee' firms.⁴⁰ In other words, while lead firms like Apple can largely disassociate themselves from mass labour processes, contract manufacturers 'must oversee large workforces and deal with the 'labour question,' such as finding the right quantity and quality of (un)skilled labour and figuring out how to ensure that the employees they hire perform satisfactorily within the context of the workplace (i.e., are as productive and compliant as possible).'⁴¹ This not only requires securing access to sufficient reserves of labour power (supply); but must also be concerned with the social,

political, institutional conditions conducive to sustained capital accumulation. ICT hardware manufacturing remains a labour-intensive process. Assembling an iPhone requires approximately 400 distinct steps, whereby most workers 'do one task repeatedly all day, such as polishing the screen, soldering one component, or fitting a single screw into the back of the phone.'⁴² This model comes at great human cost for the workers, who endure exhaustion, poverty wages, extremely long working weeks, unsafe workplaces, insecure contracts and many other violations of basic workers' rights (see point h).

Global labour arbitrage

Richard Freeman shows that, until the late 1980s, the global world economy included approximately half of the world's population. Trade barriers and capital controls meant that billions of people were sheltered from international competition. Then, in a short period of time, China, India, and the ex-Soviet bloc were incorporated into the circuits of global capital. This change greatly increased the size of the global labour pool from approximately 1.46 billion workers to 2.93 billion workers.⁴³

Since two times 1.46 billion is 2.92 billion, Freeman calls this 'the Great Doubling'. Transnational corporations have benefitted enormously from global labour arbitrage, a term used to refer to how work is being relocated to low-cost areas, with outsourcing as the main tool. Besides a preference for 'locales where wage costs can be minimized and greater returns on capital can be secured, firms increasingly are seeking out countries where regulatory "burdens" – such as labour protections and environmental regulations – are lowest, further adding to their profitability.'⁴⁴ That is to say, lead firms use transnational outsourcing as a lever to drive down wages and working conditions. The result, as Nicole Philips argues, is a 'highly leveraged form of managed trade' in which lead firms control production – neither markets nor states – and in which the value of the system is captured by the most powerful actors within it'.⁴⁵ The possibility of shifting production between different locations, put sourcing companies into a position where they could exert undue influence over suppliers and workforces.⁴⁶

This results in an ever-larger mass of workers that are employed in global supply chains that are organised by lead firms like Apple or Dell. The International Trade Union Confederation (ITUC) 'found a hidden workforce of 116 million workers in the global supply chains of just 50 multinational companies, or 94 percent of their total supplier workforce.'⁴⁷ The report estimates that Apple is dependent upon between 1.6 to 2.3 million hidden workers; of which a significant portion are employed by Hon Hai.

This is also evident when we view the world-wide expansion of export processing zones (EPZs): China alone has over 300 free trade zones where 40 million workers produce for export. Electronics hardware is typically assembled in one of these zones. China also dominates when it comes to the global distribution of electronics manufacturing jobs. Almost two-thirds of approximately 12.3 million jobs associated with electronics manufacturing are based in China, which is a big increase compared to 2003 when China only accounted for one-third of the total.⁴⁸ Figure 11 shows the 197 manufacturers in the electronics industry with over 10,000 workers, among which the ten largest manufacturers each employ over 70,000 workers. The overwhelming majority (134) of these factories are located in China, which, of course, includes Hon Hai's mega-factories that employ approximately 800,000 workers at more than 30 sites.

Mega-factories in Asia: 10,000 workers or more

Figure 11

191 factories in total

 Country	 Number of factories
China and Hong Kong	134
Malaysia	2
Philippines	1
Singapore	4
South Korea	6
Taiwan	34
Thailand	3
Vietnam	6



Note, this includes firms that locate much of their production overseas, like Hon Hai in Taiwan or Flextronics in Singapore

h. Poor working conditions

Workers have paid a high cost. Although contract manufacturers have enhanced both their international competitiveness and their capacity to meet the quality demands of lead companies, few of them would meet the criteria of decent work, defined by the ILO as productive work for women and men in conditions of freedom, equity, security and human dignity. Working conditions remain poor in terms of working hours, abusive management, trade union rights, insecure contracts (or no contracts), wages, health and safety conditions, and so on. The poor working conditions at contractor factories, especially those of Hon Hai (Foxconn), have been extensively discussed in academic, journalistic and NGO publications.

Often-mentioned labour rights abuses include excessive overtime, abusive management, low wages, lack of worker representation, never mind a lack of independent unions, improper use of student interns, and so on. Research by SACOM (Students and Scholars against Corporate Misbehaviour) disclosed how workers at Foxconn's Guanlan facilities worked an average of 120 hours overtime

per month, had only one day off every two weeks and received no overtime for working weekends.⁴⁹

Similar abuses were reported at other facilities.⁵⁰ These reports also mention misconduct by security guards and very harsh management tactics – including verbal and physical harassment – that are used to discipline workers and extract surplus labour time. In 2010–12, a string of suicides highlighted the level of desperation among the workers and brought the topic of exploitative working conditions into the international spotlight.⁵¹

As a result, Lüthje et al. argue, the overwhelming majority of the estimated 18 million workers in the electronics industry toil under a production regime characterised by 'neo-Taylorist methods of control.'⁵² Neo-Taylorism is here defined as a regime which 'combines the world-wide standardisation of work, and massive hierarchical control, with extreme flexibility of employment, based on the large-scale recruitment of mostly rural workers, the absence of trade unions and the lack of basic social and economic

protections by the state.'⁵³ To counter the very low profit margins, their business model relies on applying a strategy of 'low-cost, suppressed labour-rights competitiveness.'⁵⁴ This strategy basically combines hierarchical (despotic) control over workforces on the one hand and hyper-flexibility on the other. In this regime of employment, '[m]anufacturing workers bear the burdens of the permanent changes in orders, production volumes, and global market cycles.'⁵⁵ Contract manufacturers, in other words, are not only facing the challenges and dilemmas of volume with "quality" and "flexibility", 'Lüthje et al. write, [but also] have to deal with the particular requirements set by the production needs and marketing strategies of the brand name companies.'⁵⁶

Worker productivity is based here on de-skilling, piece rates, and 12-hour working days. These practices often result into excessive overtime, forced labour, low wages, unsafe working conditions, verbal and physical harassment by managers, and, lastly, the widespread use of temporary- and short-term contracts which discourages and undermines workers from joining unions (see chapter 2 on freedom of association).⁵⁷ Although these problems have been documented since the early 2000s, little progress has been made in addressing

them and scandals frequently break out into the public eye. In the Autumn of 2020, the *Financial Times* reported how the second largest assembler of Apple iPhones, the Taiwanese contractor, Pegatron, forced thousands of student interns at its Chinese Kunshan plant to work illegally long working hours and night shifts. One former worker is cited:

Once you step on to the factory floor, you can't stop working until lunchtime. Sometimes you get orders you can't complete — 600 to 1,000 [iPhones] per hour — and then they don't let you eat lunch.

At the root of the problem is that lead firms design sourcing practices to maximise profits and transfer risk down the supply chain to the contract manufacturers. Brands neglect to factor in the compliance costs associated with decent working conditions when they negotiate the pricing structures with their suppliers. With a low unionisation rate, few workplaces are covered by collective bargaining agreements, which further limits the ability of for workers to negotiate better working and employment conditions.

‘Once you step on to the factory floor, you can't stop working until lunchtime. Sometimes you get orders you can't complete — 600 to 1,000 [iPhones] per hour — and then they don't let you eat lunch.’

Worker quoted in *Financial Times*⁵⁸

Dormitory labour regime

In the contractors' labour control model, dormitories play an important role. Many of its workers live in dormitories at or close to the factory sites, whereby eight workers share a room in 10- to 12-floor buildings. Dormitories make it possible to monitor and control movements into and out of the factory compound, but it also allows management to exercise control over basic freedoms such as workers' marital relations, social lives, or even the right of employees to leave the factory. The separation between work time and down time has all but vanished, which enables the imposition of a 'regime of permanent overtime'.⁵⁹ At Hon Hai, as Jenny Chan and her colleagues have detailed:

'The workplace and living space are compressed to facilitate high-speed, round-the-clock production. The dormitory warehouses a massive migrant labor force without the care and love of family. Whether single or married, the worker is assigned a bunk space for one person. The "private space" consists simply of one's own bed behind a self-made curtain with little common living space.'

'Suicide as Protest for the New Generation of Chinese Migrant Workers: Foxconn, Global Capital, and the State'⁶⁰

These kinds of living arrangements are the norm in China's export factories. Ngai Pun and Chris Smith have described China's model of industrialisation as a 'dormitory labour regime.'⁶¹ This refers to the 'systemic provision of dormitories for internal migrant labour within or around factories (that) facilitates continuous access to fresh labour reserves from the countryside and depresses wage demands and affects collective organisation by workers in a particular industrial space.'⁶² These rural migrant workers are denied urban citizenship rights, which turns them into 'second-class citizens,'⁶³ which means 'they are deprived of basic rights in the city and at the workplace, and their reproduction remains somewhat dependent on or tied to the rural economy.'⁶⁴ The dormitory labour system provides management with the opportunity to further extend the workday as travel times have been eliminated, as well as 'direct control over the daily reproduction of labour power in accommodations, food, travel, social and leisure pursuits within the production units.'⁶⁵ But while, on the one hand, it provides 'a socio-political space that condenses the sphere of production and daily reproduction,'⁶⁶ management has no interest in the reproduction of the next generation of workers. Instead, this long-term reproduction is left up to:

'Chinese rural society [which] can take care of new workers, as the abundance of rural labour ensures the continuous supply of commodified labour to factories. Instead, the focus is now on maximising the utilisation of the labour of the temporary, migrant and contract labourer by controlling the daily reproduction of their labour power.'

'Apple, Foxconn, and Chinese workers' struggles from a global labor perspective.'⁶⁷

These 'factory-cum-dormitory complexes' make it possible to impose long overtime hours as the workers do not have to commute between home and work. These walled-in compounds are located on factory sites, and under constant surveillance by security guards. The stretching of the working hours, Christian Fuchs has argued, 'affects workers' reproduction requirements in terms of sleep and social relations so that their sleeping time and social time becomes impoverished.'⁶⁸ The workers' dystopia of those who 'never sleep, never consume, never have children, and never spend time socialising outside of work' is becoming a reality inside these factory compounds.⁶⁹ Those workers who decide to start a family often have no choice other than to leave the raising of their children with extended family members in their birth villages, often hundreds of miles away. UNICEF estimates that there are approximately 69 million children who have been left behind as a result of labour migration in China.⁷⁰ This is one reason why women with children are often most affected by the wages and conditions of export-driven industries. The low basic wages are not only inadequate to afford childcare, but leaves workers with little choice other than to take as much overtime as possible. An immediate consequence is a dysfunctional family life. This spatial separation between production and reproduction (raising children) constitutes important 'background conditions of possibility' for capitalist accumulation,⁷¹ which benefits both contractors and brands. As Jenny Chan writes:

'This spatial separation between production in the city and child-rearing in the countryside means that rural migrant workers cannot become completely proletarian; they are caught between two worlds. Min chooses to pursue "a life that is worth living," but is only able to do so by leaving behind her two daughters and her husband in the village.'

'Who Speaks for China's Workers?' Labor Notes.⁷²

The dormitory labour regime makes it possible to pay poverty wages and 'normalise' exhaustingly long working weeks of 70 hours or more. These 'non-commodified' zones of social reproduction in the countryside – split-off in space from the industrial zones – have enabled the dramatic outsourcing of mass production to China, which can only be understood as a 'free gift' from the Chinese countryside.

i. Contested factories

The Chinese workers in contractor factories are not protected by an independent union. Unions are controlled by the Chinese state (see chapter 8 on freedom of association). Of course, this does not mean that the workers do not resist management even if the balance of power on the shop floor is heavily tilted toward management. Fear of demotion, intimidation, job loss, violence and arrest create an environment that further discourages participation in any organised actions. High labour turnover is one way to express worker discontent, which is sometimes referred to as ‘collective inaction’ where workers ‘seek individualized solutions to their predicaments.’⁷³ In other cases, however, workers do find ways to resist collectively. They show their discontent by taking direct action.

The *China Labour Bulletin* (CLB), the journal of a labour rights NGO based in Hong Kong supports and actively engages in the emerging workers’ movement in China. It identifies no less than 33 cases of mass worker actions at Hon Hai’s factories in China during the period 2011–2020, including nine that involved over one thousand workers (see figure 12).

The majority of these actions are actual strikes. In most cases, worker demands focus on wages, including (unpaid) bonuses, subsidies, welfare benefits and severance payments due to factory closures. Other causes of labour unrest include overtime and extremely rigorous quality control, verbal harassment by management, abuse by security, layoffs, and annual leave.

Strikes are the most common form of action. Since strikes are not protected by law, workers risk arrest for disrupting the public order. But even more drastic actions frequently occur. The CLB database mentions no less than five cases where a group of Hon Hai workers threatened to collectively jump off a roof. ‘The threat of mass suicide,’ Jenny Chan and colleagues write in *Dying for an iPhone*, ‘emerged as a staged performance to force managers to accept immediate negotiations.’⁷⁴ These ‘suicide strikes,’ as Bob Larson calls them,⁷⁵ may demonstrate how ‘worker inventiveness and solidarity can still wring concessions out of capital, even possibly at life’s last instant;’⁷⁶ it is also a clear sign of how desperate workers must be if mass suicide is used as a bargaining technique.

Mass worker action at Foxconn facilities in China

Figure 12

Participation of more than 1,000 workers



Labour resistance is of course not restricted to Hon Hai factories, since poor working conditions are very common in the electronics industry. The CBL has identified 386 labour actions at electronic factories, including seven cases concerning Samsung factories, and one case at Fairchild Semiconductors and NXP Semiconductors. The combined relevance of these struggles has created a space for workers' concerns to be heard beyond the local or national levels and has further helped raise awareness of their working conditions to a wider audience, such as the global network of solidarity organisations that have been mobilised to increase the pressure on Apple and to support workplace improvements.

Here the work of the Hong Kong-based SACOM has been particularly important in connecting the hidden spaces of production with the visible spaces of consumption,⁷⁷ whereby the prominence of a brand like Apple makes them particularly vulnerable to public criticism. A variety of organisations have sought to change the way Apple – and other protagonists in the industry – organise the sourcing of their products. In the electronics industry, transnational campaign coalitions such as GoodElectronics have been successful in convincing a growing number of public buyers (city governments, universities, hospitals) to ethically procure the goods they consume, including electronic goods such as computers and smartphones.

Today, public procurers are increasingly aware of the role they can play in making the industry more sustainable (more on this in chapter 10).

Conclusion

This chapter has highlighted the role that contract manufacturers play in electronics production. Here we have highlighted contract manufacturers have turned into large global corporations that occupy a crucial role in the organisation of global production networks. supply chains on behalf of branded lead firms. Contract manufacturers provide lead firms like Apple with an opportunity to access the world's low-cost labour reserves, while disassociating themselves from labour-intensive production processes, and thus from labour struggles that involve wages, working conditions and reproduction. Contract manufacturers, in turn, in order to secure their access to global production networks, must constantly balance the request of lead firms to deliver high quality products, as flexible and timely as possible, with the need to keep the cost of labour as low as possible. As we have seen, few of these corporations would meet the criteria of *decent work* as working conditions remain poor in terms of wages, employment security, hours of work and trade union rights.



Foxconn building at Longhua. Photo: Jenny Chan

Endnotes

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8. Trade union rights in the global electronics industry

Author: Jeroen Merk (The University of Edinburgh)

Freedom of association is one of the eight fundamental conventions of the 1998 International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work and is expressed in the Freedom of Association and Protection of the Right to Organise Convention No. 87 (see box). These rights are enshrined in various ILO conventions (Nos. 87, 98 and 135 respectively) and are closely related to other civil and political rights, including freedom of expression, freedom of the media and universal suffrage.¹

The importance of freedom of association and the right to organise lies predominantly with the fact that they constitute the basic conditions through which workers can demand respect for their rights, which is why they are often referred to as ‘enabling rights’ or ‘process rights’.

Workers can only gain enough bargaining leverage to extract concessions from management and limit its arbitrary authority through collective representation. On a national level, trade unions can be an important vehicle through which workers can claim their ‘fair share of economic and social development.’² In addition, some studies have found that trade union rights have positive effects on the economic performance of countries.³

However, workers in the electronics hardware industry face significant difficulties in organising themselves vis-à-vis their employers, and the presence of unions is extremely limited. In this chapter we provide two main explanations: the political repression of trade unions and anti-union attitudes of lead firms.

The ILO Declaration on Fundamental Principles and Rights at Work covers the following four fundamental principles and rights at work, laid out in eight conventions:

- Freedom of association and the effective recognition of the right to collective bargaining (Convention No. 87 & No. 98)
- Elimination of all forms of forced or compulsory labour (Convention No. 29 & No. 105)
- Effective abolition of child labour (Convention No. 138 & No. 182)
- Elimination of discrimination in respect of employment and occupation (Convention No. 100 & No. 111)

Political repression of trade unions

Dwight Justice of the International Trade Union Confederation argues that, regarding trade union rights, one can roughly distinguish between three types of countries. First, there are the countries where it is hard for a company to directly violate trade unions rights, even though, indirectly, by using triangular relations, for example, corporations can avoid collective bargaining. Second, there are the countries where freedom of association is totally banned, which is actually rare (Saudi Arabia is an example). The third, and by far the largest group, including China, Malaysia, Mexico, Vietnam and many more, consists of countries where the situation remains grey; trade union rights might have some (limited) protection under the law, but implementation, monitoring and enforcement are generally weak. These countries provide companies with plenty of opportunities to engage in anti-union activities without fear of prosecution. At the same time, companies are, as Dwight Justice puts it, 'not prohibited from doing the right thing,'⁴ but this would require positive action to ensure a workplace culture where workers are encouraged to freely exercise their rights.

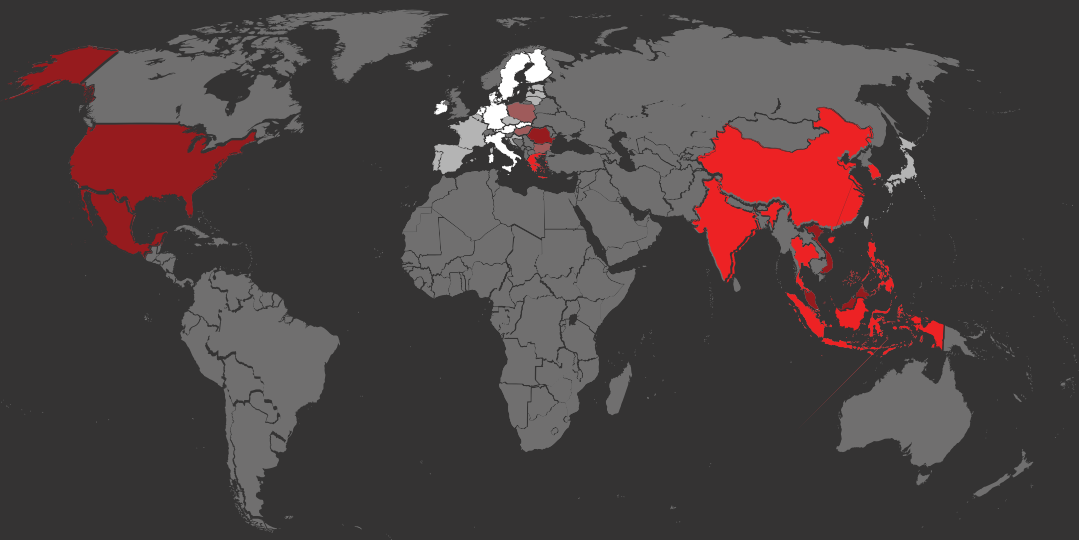
Most electronic hardware manufacturing takes place in countries that are part of this third group, where trade union rights are poorly protected, if not under outright attack. An estimated 70% of manufacturing takes place in Asia, specifically China. As of 2020, 155 countries have ratified ILO convention No. 87, and 167 countries have ratified ILO convention No. 98. These conventions cover freedom of association and the right to collective bargaining. While the number of countries that have ratified these two conventions may seem impressive, it does not reflect a near universal recognition in terms of number of electronic workers covered by these core labour rights. China, India, the United States, South Korea and Thailand have so far failed to ratify either convention, while Singapore, Taiwan, Vietnam and South Korea have only ratified one of them (see figure 1).

Of the major electronics manufacturing countries outside of the EU and Japan, only Indonesia and the Philippines have ratified the eight ILO core conventions, including C87 and C98. But even in countries where the legislative framework covers

these fundamental rights, as the ITUC Global Rights Index shows,⁵ protection and enforcement are often sorely deficient (see figure 1). This index awards countries like China, Indonesia, India, Malaysia, the Philippines, South Korea and Thailand a rating of 5 (1 = best, 5 = worst), which, for workers, translates into policies that offer 'no guarantee of rights.' Trade union rights are closely related to other civil and political rights, including freedom of expression, freedom of the media, and universal suffrage. Freedom of association is therefore indispensable to the enjoyment of other human rights.⁶ Freedom House, which measures political and civil liberties, has also indicated that many of the key electronics manufacturing sites score poorly on trade union freedoms, even if it ranks countries like Indonesia and South Korea higher than the ITUC (see figure 1).⁷

The proliferation of authoritarian tendencies has resulted in increasing numbers of governments attempting to limit civic space, whereby legislation is increasingly used against trade union organisers and labour rights advocates.

Production tends to move to places with poor records on upholding rights and where civil space tends to be shrinking



Worst Best

Note: map is coloured according to ITUC Global Rights Index

Base map: PeterHermesFurian via Getty Images

C087	International Labour Organization ratification: Freedom of Association and Protection of the Right to Organise Convention, 1948
C098	International Labour Organization ratification: Right to Organise and Collective Bargaining Convention, 1949
ITUC	International Trade Union Confederation: Global Rights Index 5+ No guarantee of rights due to the breakdown of the rule of law 5 No guarantee of rights 4 Systematic violations of rights 3 Regular violations of rights 2 Repeated violations of rights 1 Sporadic violations of rights
FH	Freedom House ranks countries on political rights and civil liberties. Table includes FH's score on freedom for trade unions (scale of 0-4, with 4 being the best).

Figure 1

	C087	C098	ITUC	FH
EU	✓	✓		4
United States	✗	✗	4	3
China	✗	✗	5	1
India	✗	✗	5	3
Indonesia	✓	✓	5	3
Japan	✓	✓	2	4
Korea (Republic of)	✗	✗	5	4
Malaysia	✗	✓	4	2
Mexico	✓	✓	4	2
Philippines	✓	✓	5	2
Singapore	✗	✓	2	1
Taiwan	✗	✓	2	3
Thailand	✗	✗	5	2
Vietnam	✗	✓	4	0

The criminalisation and stigmatisation of civil society organisations constrains the space in which workers can speak out against business-related human rights abuses, restricts organising and collective bargaining activities, and tends to undermine the strength of trade unions.

A majority of the world's electronics production takes place in China, where the state exercises monopoly control over trade union rights and restricts both political and civil rights. Trade unions in China and Vietnam are typically seen as the 'partner of the employer, mediating between employer and employees, rather than as the representative of the employees in opposition to the employer.'¹⁸ Trade union activities are mostly 'worker welfare related,' which includes activities such as 'providing emergency help to members, collecting money for charity, arranging better meals for festivals, visiting sick workers, or organizing tours.'¹⁹ Trade union branches are often led by human resource managers whose main function is to ease tensions between workers and on-site cadres, provide arbitration in cases involving disputes and function 'as a "rubber stamp" to dismiss

inefficient workers.'¹⁰ In *Dying for an iPhone*, Jenny Chan and colleagues provide a well-researched example of how this works at the world's largest manufacturer, Foxconn.¹¹ They conclude that Foxconn Trade Union 'from its inception has been an integral part of company management, the very paradigm of the company union.'¹² The union leadership, appointed by and responsive to management, fails to support aggrieved workers, who are often unaware of their union membership or express little confidence in them.¹³

Unions in most countries are commonly confronted with a range of country-specific barriers like the use of protection contracts in the Maquiladoras in Mexico¹⁴ and the unwritten 'no union, no strike' policy of Philippine-based special economic zones,¹⁵ which means that trade union representatives basically have no access to workers. These walled-in industrial zones, complete with guards, razor wire and gates, operate as de facto 'independent kingdoms without respect for Philippine labour laws,' as one labour rights advocate described it.¹⁶ Meanwhile the authorities endorse an export-led industrialisation

strategy that is based on luring foreign investment by stressing the availability of a low-wage work force and ensuring 'industrial peace.'¹⁷ Indeed, interviews with human right organisations and trade unions reveal that it is almost impossible for workers to organise within these special zones, while union representatives are practically banned from entering them. Most attempts at unionisation, the interviewees stressed, are aggressively suppressed.¹⁸ Union organisers live under risk of retaliation, including demotion, dismissal, harassment and even violent attacks on personal security. The widespread use of short-term contracts, with no job security, also presents a barrier for workers to organise or join trade unions, as employers can easily dismiss them. As one trade unionist describes it:

It is very hard to organize factories in the [export processing] zones. The authorities nor the employers show any respect for the rights of citizens to freedom of association and the right to peaceful assembly. Almost without exception, unionists face intimidation, harassment or get illegally dismissed. As a result of these tactics, many workers fear to join unions.



Figure 2

SMT workers protests against the closure of the SMT factory.

‘It is very hard to organise factories in the [export processing] zones. Neither the authorities nor the employers show any respect for the rights of citizens to freedom of association and the right to peaceful assembly. Almost without exception, unionists face intimidation, harassment or get illegally dismissed. As a result of these tactics, many workers fear to join unions.’

Interview with Reden Alcantara,
1 November 2018, Manila.

Even when workers succeed in setting up a union, management is typically unwilling to enter into good-faith collective bargaining. In November 2019, the management of SMT Philippines, a supplier of main board printers (Epson) and USB hardware (Toshiba), locked out its workforce and closed the factory, just as the union was about to initiate a collective bargaining process.¹⁹ The workers were convinced that the factory's closure was just one more example of anti-union tactics. Although workers continued to protest for 55 days in front of the factory, the factory refused to reinstate the workers as a result of its permanent closure. In the end, the best the union could achieve was that it negotiated severance payments and benefits for the dismissed workers.²⁰

Malaysian authorities have suppressed and hindered the development of trade unions by passing legislation that prohibits the formation of national union federations in the electronics sector²¹ to such an extent that, by 2013, the country had only 12 registered in-house unions with about 12,000 members out of a total of 365 electronic companies.²²

In Indonesia, unions have been able to make some inroads since the fall of Suharto's New Order regime in 1998. Despite many barriers, the Indonesian Metal Union has succeeded in organising unions across the electronics sector. Unions also drove the very large wage protests of 2012 and 2013, which succeeded in raising wages. In Batam, an electronic manufacturing hub located only 20 miles from Singapore, the metal union has established branches in 27 electronics factories and succeeded in concluding collective bargaining agreements in 14 of them.²³ However, on a global scale, Indonesia's electronics industry is dwarfed by neighbouring countries like Malaysia and the Philippines, and its contribution to global exports has actually declined since 2010.

Many countries where union rights may be officially respected, in reality, exhibit very poor enforcement of union rights protections. Under these conditions, one typically finds very few viable social mechanisms and institutions to coordinate the setting and implementation of basic labour standards like wages, working hours, seniority rules, and health and safety conditions.²⁴ There

has also been the 'thinning' or 'hollowing out' of state tasks, which includes the outsourcing of labour monitoring to private parties, chronic corruption and the lack of adequate manpower to enforce laws. Anti-union policies sharply contrast with pro-investor policies, which seek to attract foreign business through investment subsidies, tax breaks and deregulated labour markets. In Indonesia, the 'Omnibus bill on job creation' can be understood as another attempt to create a pro-business climate, but only by significantly eroding a large range of protections and benefits for workers, including minimum wage, severance payments, maternity benefits, limits on overtime, and restrictions on outsourcing.

Corporate hostility toward unions

Meanwhile, corporate resistance to unionisation remains widespread. This is partly explained by the active obstruction of labour unions by US-based lead firms that – since the industry’s inception – have dominated many segments of the electronics industry. Back in the 1970s, Robert Noyce, inventor of the transistor and co-founder of Intel Corporation, has been quoted as saying that: ‘remaining non-union is essential for survival for most of our companies. If we had the work rules that unionized companies have, we’d all go out of business. This is a very high priority for management here.’

Intel’s position is not unusual. Many of the long-established lead firms in the US have a long record of anti-union policies, including IBM, Hewlett-Packard (HP) and Advanced Micro Devices (AMD), even if unions have managed to gain some leverage over IBM and Hewlett-Packard in Europe.²⁵ Beyond US companies, the South Korean

giant Samsung also has a notorious and well-documented reputation of resisting unionisation.²⁶ Samsung Chair Lee Kun-hee has stated that, ‘[what] Samsung does not recognise is not the trade union itself, but the need to have a trade union. In other words, Samsung has a principle of management that does not need trade unions.’²⁷

‘remaining non-union is essential for survival for most of our companies. If we had the work rules that unionized companies have, we’d all go out of business. This is a very high priority for management here.’

‘The Electronic Industry Code of Conduct: Private Governance in a Competitive and Contested Global Production Network.’³³

The company produced a 115-page management instruction manual that outlines, among other things, 'how to detect workers who are most likely to attempt to organise, how to monitor them and how to isolate and eventually thwart workers who exercise their rights to form a union.'²⁸ The manual was used to train managers in how to implement 'an effective "union free" policy' across its production sites in Asia. In Indonesia, Samsung remains one of the few employers where unions have been unsuccessful in establishing a foothold.²⁹ In 2012, there was a unionisation attempt at one of its facilities in Cikarang to end the use of irregular employment contracts.

The company 'responded with threats, persuasion, surveillance, and violence [and] it took only 40 days for Samsung to completely destroy the union.'³⁰ With these stories in mind, it is not surprising that the ITUC General Secretary Sharon Burrow concluded, 'From the top of its supply chain down, Samsung prohibits the formation of unions.'³¹ However, at least in the case of South Korea, this type of union hostility faces legal limitations. In 2019, both the chairman and the vice-president of the Samsung Electronics board received 18-month prison sentences for sabotaging labour union activities. These anti-union practices are by no means limited to Samsung and create

an industry-wide atmosphere of fear that involves demotion, intimidation, job loss, factory closure, blacklisting, violence and arrest, which discourages participation in trade unions and organised worker actions. It has often been observed that precariously hired workers avoid getting involved in union activities for fear of losing their jobs.³² The casualisation of work often extends into workplaces that operate on a formal basis, for example, by hiring workers without a formal contract or by using labour agencies, which further undermines the development of effective industrial relations.

CSR: no panacea

Since the early 2000s, civil society campaigns have engaged lead firms regarding systems of supply chain accountability by which these corporations are compelled to accept the responsibility of upholding decent working conditions at their suppliers.³⁴ Key lead firms in the industry have long been members of the Responsible Business Alliance (RBA),³⁵ whose membership has grown to over 150 companies in recent years. In response to civil society organisation criticism of poor working conditions, the RBA has adopted an ‘Electronic Industry Code of Conduct,’ which articulates a set of social standards for members and their tier 1 suppliers and is based on risk assessment tools, self-assessment questionnaires, reporting and auditing by ‘third parties’ (though paid for by business).³⁶ The RBA has become the main vehicle through which the industry addresses social and environmental concerns, but it is one that deliberately marginalises the role of both non-business stakeholders and unions. In addition, the RBA Code has also been criticised for its ambiguous language regarding freedom of association and its failure to refer to ILO Conventions.³⁷ Although

the most recent 2018 version of the Code includes the right to collective bargaining, the majority of RBA members voted down the inclusion of this right in previous iterations of the code.³⁸ Since many lead firms have engaged in activities to undermine unions or avoid any form of interaction with them, the adoption of rights in ethical policies such as the RBA Code of Conduct seems like a classroom example of decoupling, which refers to the gap between ethical discourse and implementation (or effects), which can easily undermine the output legitimacy of the instrument.³⁹ As a legitimising cover, decoupling refers to practices whereby TNCs pay lip service to ethical principles in an attempt to restore brand legitimacy and trust.⁴⁰ Since many lead firms have engaged in activities to undermine unions or avoid any form of interaction with them, it is worth questioning whether they would give trade union rights serious attention during supply chain audits or remediate them when confronted with abuses.⁴¹

In other words, the suspicion has been raised that trade union rights are endorsed in a mere aspirational fashion, while the

imperatives of profit-making and flexible production create ‘strong and systematic incentives for firms to violate their own supply chain codes.’⁴² Take Apple, for example: although the company endorses freedom of association in its ethical policies, this does not prevent it from sourcing the majority of its merchandise from China where freedom of association is not respected by law. In short, the RBA Code is a doubtful tool when it comes to improving respect for trade union rights. This is hardly unique to the electronics sector, but rather – as the growing body of studies on this topic show – has long been identified as a structural limitation of private governance instruments. As Kate MacDonald argues, by marginalising unions, these systems offer no space for marginalised groups ‘to exercise meaningful control over decisions that influence core dimensions of their well-being.’⁴³ Instead, she continues, ‘powerful supply chain actors strongly resist initiatives that would destabilize established patterns of control.’⁴⁴

IndustriALL, the global union federation that represents workers in the electronics sector, argues that it is difficult to negotiate global framework agreements (GFAs) in the electronics industry because many firms 'use the [RBA] Code of Conduct as an escape route.'⁴⁵

By negotiating a GFA, lead firms signal that they are willing to develop a structured approach regarding a social dialogue on how best to protect labour rights throughout their business operations. By recognising unions as key partners, these agreements emphasise the right to freedom of association and collective bargaining, which could 'eventually lead to workers participating in monitoring labour conditions in their own factories.'⁴⁶

So far it has succeeded in negotiating only three GFAs in the electronics industry; Bosch

(2012), Electrolux (2011), and Siemens (2012). Kan Matsuzaki, Director ICT Electrical & Electronics at IndustriALL, states that only 10% of RBA member companies have unions or are affiliated with the global union. Figure 3 provides an overview of the presence of IndustriALL at the world's 20 largest ICT firms, based on annual revenue in 2019. Together these companies employ over 4.7 million workers. For IndustriALL it is especially worrying that, in recent years, companies from countries with rather hostile or adverse union institutional contexts like South Korea, China and the US, increasingly dominate the industry.

With these practices in mind, it is not very surprising that trade union rights are overlooked in monitoring and auditing processes.⁴⁷ Freedom of association requires companies to refrain from limiting workers' freedom, while collective bargaining requires

companies to take a positive approach toward negotiations in order for this right to be realised. Many studies have shown that union representation is generally very low and anti-union practices prevalent. Jonkoo Lee et al. analysed data derived from six NGO reports covering working conditions at mobile phone contract manufacturers in China and India. They found not only an 'extremely low level of unionisation' but also that 'companies generally lacked communication channels with workers.'⁴⁸ They concluded that the private governance systems and codes of conduct of lead firms only 'played a little role' at these production sites.⁴⁹ There is also a small body of academic work that criticises the (undemocratic) union practices at both Hon Hai Precision (Foxconn) factory sites in China and overseas.⁵⁰

IndustriALL's interaction with large ICT firms

Figure 3

	Annual Revenue (US\$ billion)	2018 ranking	2019 ranking	Employees (2018-19)	Country	Global Framework Agreement	Presence of IndustriALL
✗ Apple	265.234	1	1	132,000	USA		No
✗ Amazon	232.887	5	2	647,000	USA		No
✗ Samsung Electronics	211.597	2	3	320,671	South Korea		Very low
✗ Hon Hai	175.617	3	4	667,680	Taiwan-China		Low
✗ Alphabet Inc.	136.819	8	5	98,771	USA		No
✓ General Electric	120.268	4	6	283,000	USA		Yes
✗ Microsoft	125.800	9	7	144,106	USA		No
✗ Huawei	105.191	12	8	188,000	China		No
✓ Siemens	91.585	7	9	379,000	Germany	Yes	Yes
✓ Hitachi	84.559	10	10	307,275	Japan		Yes
✓ IBM	79.139	11	11	397,800	USA		Partly yes
✗ Dell	78.700	14	12	145,000	USA		No
✗ Sony	77.100	15	13	114,400	Japan		Low

Source: Adapted from Kan Matsuzaki

IndustriALL's interaction with large ICT firms

Figure 3

	Annual Revenue (US\$ billion)	2018 ranking	2019 ranking	Employees (2018-19)	Country	Global Framework Agreement	Presence of IndustriALL
✓ Panasonic	72.000	16	14	273,858	Japan		Yes
✗ Intel	62.761	17	15	102,700	USA		No
✓ LG Electronics	54.314	20	16	74,000	South Korea		Yes
✗ JD.com	54.000	-	17	157,831	China		No
✓ Hewlett-Packard	52.056	6	18	49,000	USA		Partly yes
✗ Lenovo	45.350	-	19	54,000	China		No
✗ Pegatron	39.238	-	20	177,950	Taiwan-China		No

Multinational companies from the USA, China and South Korea

Total revenue (US\$ billion) of top 20 multinational companies

Total number of employees in top 20 multinational companies



Industry benchmarks

To get a broader sense of how lead firms in the electronics industry are performing on freedom of association and collective bargaining rights, we can turn to the KnowTheChain benchmark and the Corporate Human Rights Benchmark (CHRB) (see figure 4).⁵¹ Both initiatives seek to assess the performance of firms in the electronics industry against a set of human rights standards and practices. While KnowTheChain focusses on forced labour risks within global supply chains; the CHRB ranks their performance of companies against six broad themes grounded on the UN Guiding Principles on Business and Human Rights (UNGPs).⁵² Both initiatives select the largest firms in the sector, using market capitalisation as selection criteria. Both initiatives also adopt a number of indicators related to freedom of association, which we will focus on.

The CHRB seeks to provide a comparative snapshot of the largest companies by ‘looking at the policies, processes, and practices they have in place to systematise their human rights approach and how they respond to serious allegations.’ While the

maximum, aggregated, score of firms can be up to 100%, the world’s largest ICT manufacturing firms score very poorly. With an average score of 18%, ICT firms perform worse than firms in the agricultural products (24%), apparel (25%) or extractive sectors (29%). In their 2019 Key Finding Report,⁵³ not a single ICT manufacturing company scored above 50%, and more than two-thirds scored below 20% (see figure 4).

KnowTheChain has ranked the 49 largest publicly traded ICT companies in 2020. It includes firms like Apple, HP, Dell, Samsung, Hon Hai Precision (Foxconn) and Qualcomm, among others. Although this tool is primarily designed to research the efforts of companies in addressing forced labour risks, their methodology uses the ILO core labour standards and includes a number of indicators that provide insight into how a company collaborates with unions to support freedom of association in its supply chains.⁵⁴ Although trade unions and civil society organisations have long pressured electronics companies to adopt a more positive approach towards trade unions, freedom of association was the only indicator

in KnowTheChain’s 2020 report where all 49 companies scored zero points. This means that none of the companies could present any evidence that they were working with local or global trade unions to support freedom of association in their supply chains, including involvement in a global framework agreement or another enforceable supply chain labour rights agreement.⁵⁵

Freedom of association in this index is part of a broader indicator, namely the ‘workers’ voice,’ which also measures efforts to promote worker engagement through information and training as well as effective grievance mechanisms. The 49 companies evaluated scored an average of 12 out of 100 points for this category, making it the lowest-scoring theme in the benchmark (12 points is the average for three indicators; worker engagement, freedom of association and grievance mechanisms). The index shows that companies like Apple, Dell and HP score relatively high in the workers’ voice and grievance mechanism categories.

These two indicators often serve as measurement proxies for trade union rights in codes of conduct monitoring, but can easily be interpreted as an attempt to redefine (or water down) the ILO definition of freedom of association.⁵⁶ This happens specifically in these two contexts. First, when it provides social auditors with a loophole to ‘attest that freedom of association is respected in countries where the government does not adequately protect this right or where its exercise is illegal,⁵⁷ such as in China and Vietnam. Second, there is a real risk of the ‘workers’ voice’ being merely associated with the presence of a workers council or committee at the workplace, dealing with, for example, health and safety issues. While such committees can be valuable, they are no substitute for union-driven dialogue between management and workers, which

is also emphasised in ILO Convention No. 135 on Workers’ Representatives. But this is precisely what happens when companies say they ‘prefer workers’ councils instead of unions, as they are more constructive in their communication.’⁵⁸ In both cases, these practices fail to provide workers with an independent voice, let alone genuine worker representation and collective bargaining.⁵⁹ This is unfortunate since collective bargaining is not simply a means to get a better wage for workers, but also process by which they assert and realise their rights. Figure 4 shows the scores of 25 companies mentioned by CHRB and KnowTheChain. We have selected companies that are part of the Apple supply chain,⁶⁰ while selecting indicators that are most relevant to the issues of freedom of association and collective bargaining.

Precarisation of work

Freedom of association and collective bargaining are also undermined by the way the industry is organised. Decades of just-in-time production and lean manufacturing have created tightly connected global production networks that are vulnerable to any type of interruption. Lead firms (buyers) design sourcing practices to maximise profits and transfer risk down the supply-chain to the contract manufacturers. They neglect to factor in the compliance costs associated with decent working conditions when they negotiate the pricing structures with their suppliers. They expect contract manufacturers, as Harris notes, ‘to pirouette production like a ballerina at any time on a 24/7 regime irrespective of human constraints.’⁶¹ Contract manufacturers, in turn, have endorsed strategies that are based on hierarchical (despotic) control on the one hand and hyper-flexibility on the other. They rely on large numbers of contingent (migrant) workers that are typically employed on temporary contracts. This undermines trade unions as employers can easily dismiss active trade unionists.

Benchmarks

Corporate Human Rights Benchmark 2019

KnowTheChain Benchmark 2020

Apple suppliers

Total rounded-off scores (out of 100)

A.1.1 (out of 2)

A.1.2

D.4.6.a

D.4.6.b

Worker Engagement

Freedom of Association

Grievance mechanism

Supplier	Total rounded-off scores (out of 100)	A.1.1 (out of 2)	A.1.2	D.4.6.a	D.4.6.b	Worker Engagement	Freedom of Association	Grievance mechanism
Apple Inc.	35.6	0	0.5	1		100	0	90
Samsung Electronics	39.6	1	0.5	0	0	25	0	70
Intel Corporation	35.8	1	0.5	1	0	50	0	50
NXP Semiconductors	28.2	1	0.5	0	0.5	37.5	0	60
Taiwan Semiconductor Manufacturing	25.4	1	0.5	0	0	12.5	0	10
Texas Instruments Inc.	23.3	1	0.5	0	0	12.5	0	20
ASML Holding*	20	2	0.5	2	0	12.5	0	30
Micron Technology	19.2	1	0.5	1	0	12.5	0	30
Hon Hai Precision Industry Co., Ltd. (Foxconn)	17.4	1	0.5	2	0	0	0	10
Corning Inc	16.1	1	0.5	0	0	0	0	20
SK Hynix	15.2	2	0.5	1	0	12.5	0	0
Murata Manufacturing	14.9	1	0.5	0	1	12.5	0	0
Analog Devices	14.7	1	0.5	1	0	12.5	0	20

A.1.1: Commitment to respect human rights

A.1.2: Commitment to respect the human rights of workers

D.4.6.a: Freedom of association and collective bargaining (in own production or manufacturing operations)

D.4.6.b: Freedom of association and collective bargaining (in the supply chain or manufacturing operations)

*Not a direct supplier to Apple, but supplies machinery to TSMC

Figure 4

Benchmarks

Corporate Human Rights Benchmark 2019

KnowTheChain Benchmark 2020

Apple suppliers

Total rounded-off scores (out of 100)

A.1.1 (out of 2)

A.1.2

D.4.6.a

D.4.6.b

Worker Engagement

Freedom of Association

Grievance mechanism

Hitachi Ltd

13.3

2

0.5

0

0

12.5

0

10

Infineon Technologies AG

13

1

0.5

1

0

0

0

0

Skyworks Solutions

10.2

1

0.5

0

0

12.5

0

10

Qualcomm

8

1

0.5

0

25

0

20

Microchip Technology

5.6

1

0.5

0

0

0

0

0

BOE Technology Group

5.3

0

0.5

1

0

0

0

0

Amphenol Corporation

4.9

0

0.5

0

0

12.5

0

10

Broadcom

2.9

1

0.5

0

0

0

0

20

Western Digital

2.9

0

0.5

0

0

12.5

0

0

Largan Precision

1.1

0

0

0

0

0

0

0

STMicroelectronics

12.5

0

30

Sony Corp.

12.5

0

20

Panasonic Corp.

12.5

0

10

A.1.1:
Commitment to respect human rights

A.1.2:
Commitment to respect the human rights of workers

D.4.6.a:
Freedom of association and collective bargaining (in own production or manufacturing operations)

D.4.6.b:
Freedom of association and collective bargaining (in the supply chain or manufacturing operations)

Figure 4

These kinds of benchmarks must be used cautiously, however, because, as Rajiv Maher argues,⁶² they rely predominantly on self-reported corporate data on human rights policies practices and procedures, like CSR and sustainability reports. Meanwhile, they tend to focus much less on information from secondary sources, especially victims of business-related human rights harm. As a result, Mayer continues, these tools provide too little space for voices of victims of human rights abuses by companies. This not only risks making the ‘benchmarks appear to be de-contextualised and ahistorical’ but also tends to promote a managerial – or top-down – approach with regard to human rights concerns about worker or community-driven approaches.⁶³ The rather perverse consequence is that a company like Samsung, despite a notoriously hostile union record, is ranked fourth out of 49 electronic companies by CHRB, even though the company only received 39.6 points out of a total of 100 points, which can hardly be interpreted as a positive achievement. A similar tension occurs elsewhere in the

KnowTheChain ranking, where Apple has been granted a 100% score on ‘worker engagement,’ while receiving zero points for freedom of association. This gives the impression that ‘worker engagement’ provides a way for companies to suggest they can address or circumvent a state’s restrictions on freedom of association, while continuing to source from suppliers located in countries that repress trade unions.⁶⁴ Likewise, Hon Hai Precision (Foxconn) is given the maximum score by the CHRB benchmark (i.e., 100%) for indicator D.4.6a, which would reflect that the company respects the right of all workers to form and join a trade union of their choice, although researchers and labour rights activists have long expressed doubts about the independence of this union from managerial control.⁶⁵ At best, the KnowTheChain and CHRB provide a proxy for corporate human rights performance. But the benchmarks urgently need to be supplemented with qualitative, on-the-ground research based on inputs from affected rights holders.

With few unions on the ground, the profound power asymmetries that characterise the electronics GPNs between lead firms and major contract manufacturers on the one hand, and workers on the other, are necessarily reproduced in the governance systems set up to implement, monitor and verify labour rights.

Resources on trade union rights in the electronics industry

- **www.industriall-union.org/ict-electrical-and-electronics**

A good source for information on trade union activities in the global electronics industry.

- **www.goodelectronics.org/topics**

An excellent source for studies on human rights violations in the electronics industry.

- **www.electronicswatch.org**

Helps public sector organisations to protect the rights of workers in their electronics supply chains.

Endnotes

- 1 The core labour standards are considered fundamental principles that defend human rights; even when not ratified, all ILO member countries are bound to implementing these rights. Every nation is a member of the ILO except Andorra, Lichtenstein, Micronesia, Monaco, Nauru and North Korea.
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- 7 Freedom House awards a country or territory 0 to 4 points for each of 10 political rights indicators and 15 civil liberties indicators, which take the form of questions; a score of 0 represents the smallest degree of freedom and 4 being the greatest degree of freedom. This tables only shows the scores on e.3: Is there freedom for trade unions and similar professional or labour organizations? See for the methodology: www.freedomhouse.org/reports/freedom-world/freedom-world-research-methodology.
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- 12 Ibid.
- 13 Ibid.
- 14 See Lüthje et al. op cit., chapter four.
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- 16 Daisy Arago, executive direct of the Center for Trade Union and Human Rights quoted in: Remmers, M. and I. Schipper (2015) '*Unable to Connect: Research on Labour Disputes at NXP*,' SOMO, Amsterdam, p. 9.
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- 18 Kelly, P. (2013) 'Production networks, place and development: Thinking through Global Production Networks in Cavite,' Philippines, *Geoforum*, vol. 44, p. 86.

- 19 For a longer discussion: GoodElectronics (16 October 2018) 'GE statement on the situation of striking workers of SMT Philippines, Inc.,' available at: www.goodelectronics.org/ge-statement-on-the-situation-of-striking-workers-of-smt-philippines-inc [last accessed, 9 December 2020].
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- 29 Even accessing workers at these facilities is difficult, according to labour rights activists from LIPs. (Interview).
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Part 3.

Interventions

9. Electronics Watch monitoring and industry engagement

Author: Peter Pawlicki (Electronics Watch)

Public procurement is a powerful approach for holding companies accountable and engaging with the industry to improve the situation of workers and affected communities.

Universities, hospitals, counties, cities and other public bodies buy large volumes of electronics hardware – such as desktop/laptop computers, printers, network equipment, or smartphones. For that they maintain multi-year contracts with electronics brand companies, who are their suppliers. These very specific relations afford public buyers a leverage they can use to address worker rights and environmental concerns in their supply chains.

Establishing contractual obligations that commit suppliers to comply with defined social criteria gives public buyers a unique possibility to have an impact. While individual consumers are hard pressed to know anything about the origins of the products they buy, public institutions can create access to such information. They can receive and act on complaints.

The public sector has a responsibility to act in the public interest. Public discourse on social and environmental responsibility is gaining traction and is increasingly pushing for implementation of set goals. Public procurement is a central implementation tool, also in frameworks such as the UN Sustainable Development Goals.

Setting social criteria in their tenders public buyers can utilise their market power to positively impact working conditions and help to mitigate and prevent violations of worker rights and environmental rights in the supply chains of the electronics brands from which they procure.

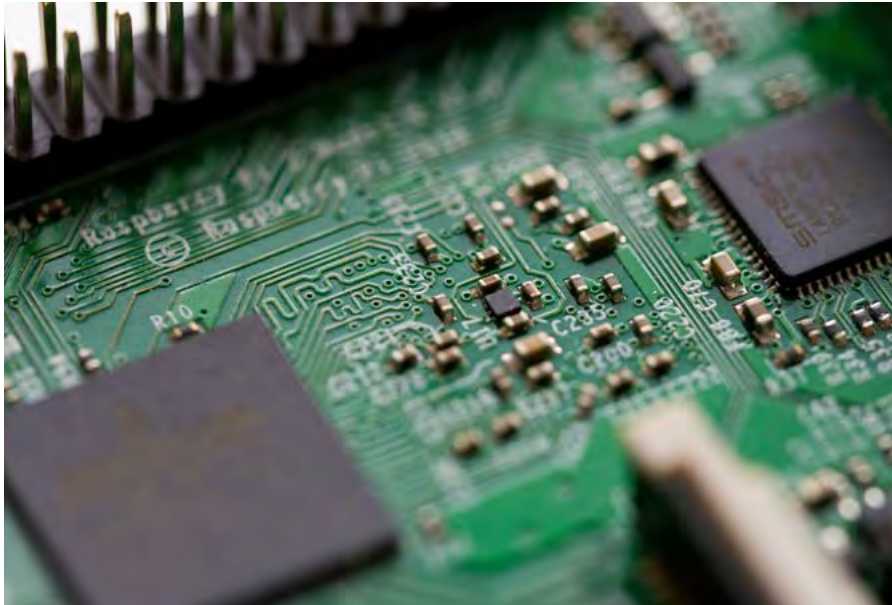
For social criteria to take effect public buyers need to monitor for compliance. Electronics Watch provides the required monitoring capabilities to affiliated public buyers. Its worker-driven monitoring methodology based on an international network of local monitoring partners provides public buyers with eyes and ears on the ground. This expertise allows affiliates to engage with the industry to drive improvements on found risks or violations.

Electronics Watch is a network of more than 300 public buyers and monitoring partners in every major production region of the electronics industry. Monitoring partners are civil society organisations who have earned the trust of workers in their communities. They are able to meet with workers in conditions that minimise their fear of reprisals. So workers often report issues directly to Electronics Watch's monitoring partners rather than the company's own social auditors.

Electronics Watch provides its affiliates with industry-independent monitoring capabilities. Its monitoring partners have no industry representatives involved in decision-making that could create a conflict of interest. They are independent labour rights experts, committed to evidence-based findings.

Public procurement generates more than €2 trillion in public contracts annually and drives 13% of the EU's GDP and 20% of GDP globally.

European Commission (2017)



‘[Electronics Watch] will support us in meeting the ethical sourcing commitments within the Mayor’s Responsible Procurement Policy and gives us capacity to verify that suppliers meet the labour rights standards in our contracts, or to proactively work with them to improve working conditions where further development is needed.’

Tim Rudin, Head of Responsible Procurement,
Greater London Authority

The Electronics Watch model of worker-driven monitoring and industry engagement has proven successful time and again and has developed into an internationally accepted standard for monitoring quality and impact.

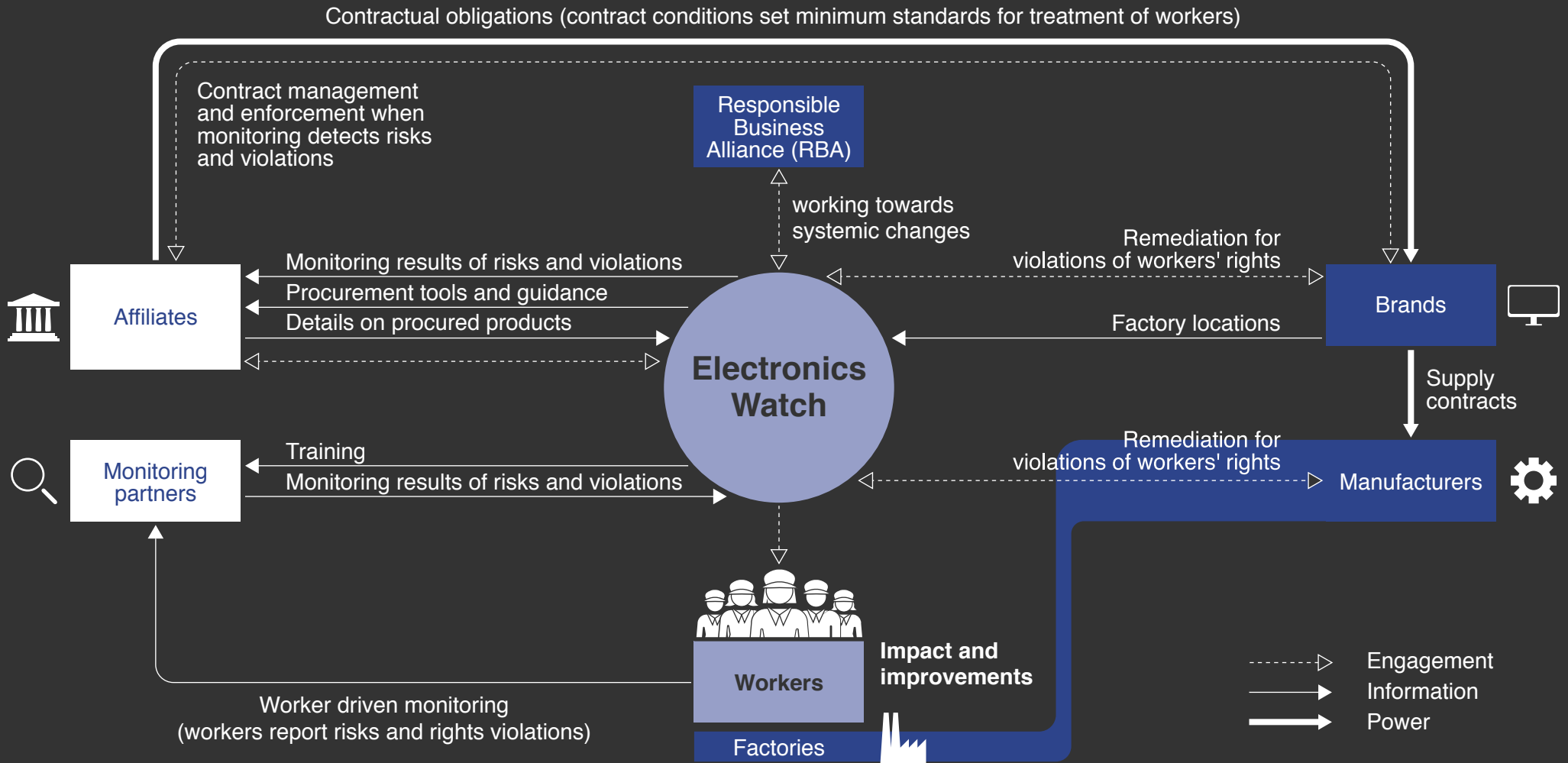
In 2019 Electronics Watch reported a success for workers in Thailand. 10,570 migrant factory workers in two Cal-Comp facilities received full compensation for excessive recruitment fees they had paid. This was the largest settlement of migrant worker recruitment fees ever recorded in the electronics industry. It took three years of worker-driven monitoring by Electronics Watch and its monitoring partner, the Migrant Worker Rights Network, and engagement with Cal-Comp, a supplier of printers, external hard disk drives and other computer peripherals, the Responsible Business Alliance (RBA) and companies like HP.

In 2018–2019 Electronics Watch found migrants working as forced labourers at Possehl Electronics in Malaysia. They had been hired through an outsourcing agent and had suffered delayed wage payments, illegal wage deductions and excessive overtime and faced violent threats from the outsourcing agent when they asked for their wages. Electronics Watch engaged with buyers and the RBA successfully, to ensure that the workers received reimbursements and back wages. The outsourcing agent no longer supplies workers for Possehl.

In 2019 Electronics Watch monitoring partner Sedane Labour Resource Centre (LIPS) learned that workers had been exposed to the toxic cleaning solvent toluene at an electronics subcontractor in Indonesia. Workers had suffered respiratory illnesses and often fainted. Electronics Watch filed a complaint against the main buyer, who reacted quickly to improve the health and safety conditions and conducted follow-up air quality measurements, which it shared with Electronics Watch. The Toluene was replaced with ethyl acetate, a less toxic alternative and the ventilation system was repaired. Workers received more effective protective equipment.

How Electronics Watch improves workers' lives

Figure 1



Brands: such as Apple, Cisco, Dell, Epson, HP, Lenovo.

Manufacturers: such as Biel, Hon Hai, Intel, Infineon, Western Digital, Quanta.

Manufacturers have numerous factories worldwide.

Resellers left out for simplicity.

In 2019, Electronics Watch:

- conducted a supply chain screening of two major OEMs, covering 38 suppliers,
- published a regional risk assessment on Vietnam,
- screened risks in 56 factories,
- documented and responded to worker rights complaints in 9 factories,
- conducted 8 full compliance investigations,
- engaged with 8 brands to improve conditions,
- verified improved conditions in 10 factories.

Public buyer demand drove supply chain transparency in 2019:

- 14 brands identified at least some factories that produce goods purchased by affiliates.
- 155 factories are part of the supply chain database Electronics Link, because they produce goods that affiliates buy.
- 42 factories were disclosed as production locations for 60 specific product models. Of these factories, 10 were disclosed as component suppliers for specific product models.
- Six brands reported their own compliance findings to Electronics Watch in response to our reports.

Further reading:

www.electronicswatch.org

10. The role of public procurers in responsibly procuring ICT

Author: Josefine Hintz (ICLEI)

Public procurement as a facilitator of improvements in global supply chains regarding human and labour rights as well as environmental impacts is gaining ground. International initiatives like the UN Sustainable Development Goals and the European Commission's Green Deal showcase public procurement as an important implementation mechanism toward the goal of decent work and sustainable consumption and production. The power of public buyers is immense, especially if they follow a strategic approach based on a dialogue that uses independent monitoring to prepare engagement with their supply chains with the aim of continuous and meaningful improvements.

Procurers have the opportunity to include sustainability interventions across the procurement cycle. Procurers can leverage the definition of subject matter, selection or award criteria, technical specifications or contract conditions. As part of Make ICT Fair, ICLEI and Electronics Watch, together with a number of public authorities, have developed '[How to procure fair ICT hardware - criteria set for socially responsible public procurement](#).' The application of some of the criteria and clauses can be explored in [five case studies](#) from across Europe.

Further reading:

How to procure fair ICT hardware – criteria set for socially responsible public procurement

www.sustainable-procurement.org/resource-centre/?c=search&uid=85795a98

Five case studies from European public buyers

www.sustainable-procurement.org/news?c=search&uid=PO3Dvsiy



Selection criteria

Selection criteria focus on an economic operator's ability to fulfil the contract for which they are tendering. When assessing a tenderer's ability to fulfil a contract, contracting authorities may take into account specific experience and competence related to social aspects that are relevant to the subject matter of the contract.

Example 1: Responsible sourcing practices

The tenderer has a sourcing policy that takes into account the performances of suppliers with regard to labour and human rights impacts regarding ILO core labor principles.

Example 2: Labour and human rights at raw material extraction stage

The tenderer should take steps to address labour and human rights impacts during the extraction phase of production. Steps can include:

- Disclosures related to Section 1502 of the Dodd-Frank Act on Conflict Minerals (Tin, Tantalum, Tungsten and Gold, also referred to as the 3TGs) (even if it's not a public company).
- Sourcing policies that include the use of conflict-free smelters.
- Identifying suppliers and smelters that are at a higher risk of using or processing raw materials with human and labour rights violations.
- Sourcing policies that address raw materials beyond the 3TGs.

Technical Specifications

Technical specifications tell the market precisely what you wish to purchase, and may include social aspects where this is an essential part of what is to be delivered. Tenders that do not comply with technical specifications must be rejected,¹ so it is important to only include essential requirements.

Example 1: Product transparency

The tenderer must describe the supply chain for the involved products and list significant brand owners of principal components.

Example 2: Conflict minerals requirements

The contractor must ensure that ICT equipment is produced by brand owners who have a public policy regarding conflict minerals.

Award criteria

At the award stage, the contracting authority evaluates the quality of the tenders and compares costs. When you evaluate the quality of tenders, you use predetermined award criteria, published in advance, to decide which tender is the best.

Example 1: Supplier code of conduct

The tenderer should offer a Supplier Code of Conduct or Supplier Policy that addresses: child labour; forced labour; working hours; wages; discrimination; health and safety; freedom of association and collective bargaining, disciplinary practices and the humane treatment of workers, which covers the involved ICT products.

Example 2: Capacity building

The tenderer should offer ICT equipment from brand owners with active programmes for implementing measures in the supply chain that strengthens the knowledge of workers executing the contract regarding the Basic Conditions and their ability to influence and right to negotiate collectively on working conditions in countries with high levels of human rights violations. To meet the criteria, there must be one or more independent committees with employee representatives for those working on the final assembly units of the procured product model.

Contract conditions

Electronics Watch's [Contract Conditions](#)² are an effective tool for Electronics Watch affiliates to ensure social responsibility in their electronics supply chains. The Contract Conditions are consistent with Directive 2014/24/EU on public procurement and reflect international guidance for public procurement, business and human rights, including the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines on Multinational Enterprises. The Contract Conditions require the contractor to perform due diligence to achieve supply chain transparency, collaborate with independent monitors and remedy breaches of labour rights and safety standards.

Recommendations

- Pre-tender, reflect on what you want to achieve at which tier of the supply chain and then add criteria and clauses based on your ambitions,
- Start with award criteria and work your way through, using experience towards selection criteria or technical specifications,
- Exchange knowledge with other procurers and collaborate on joint procurements with the support of procurement networks such as Procura+,
- Create a dialogue with key industry representatives, both pre-tender and post-award, to share your demand and to find out what is possible from a market perspective,
- Approach Electronics Watch, which will help to detect problems that workers do not usually report to social auditors, remedy problems in a timely manner, and address systemic issues over time.

Endnotes

- 1 Article 56.1(a) of Directive 2014/24/EU. The obligation to reject tenders that do not meet specifications was highlighted by the CJEU in Case C-243/89 Commission v Kingdom of Denmark (Storebaelt) and Case C-561/12 Nordecon AS and Ramboll Eesti AS v Rahandusministeerium (Nordecon).
- 2 Electronics Watch website, www.electronicswatch.org/en/contract-conditions_2548258.

Examples of public procurement interventions and resources

- Procurement timeline
- Examples of interventions (needs to be a tailored approach)
- Value chain
- Resources
- Risks

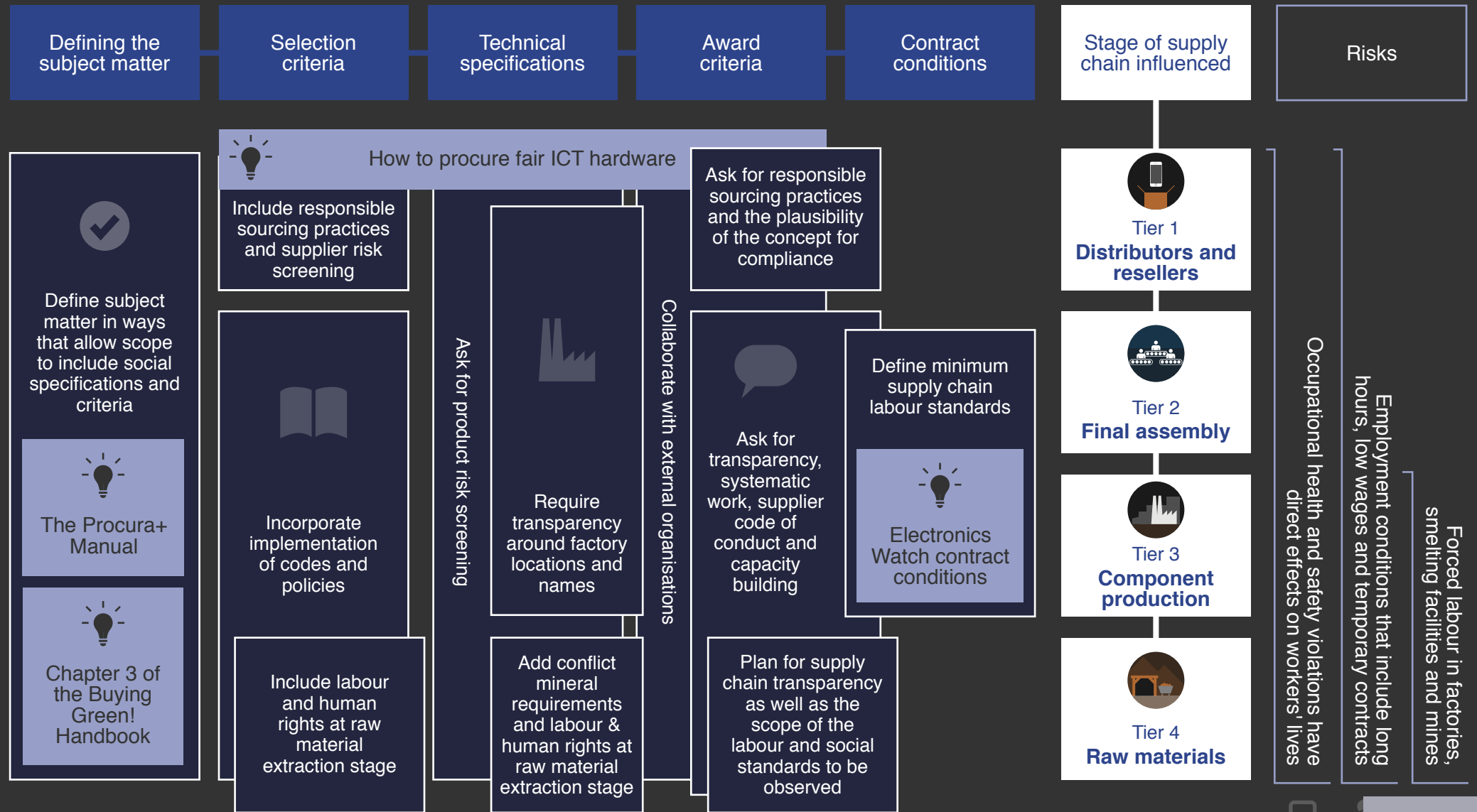


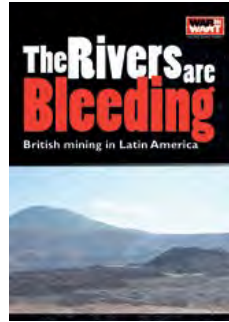
Figure 1

More publications from Make ICT Fair



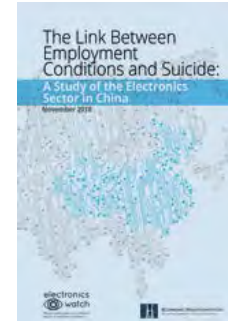
Assessing the social impacts of the preparatory and development phases at Lydian International's Amulsar mine

By Community Mutual Assistance Social NGO, on behalf of Bankwatch, published in October 2018.



The Rivers are Bleeding: British mining in Latin America

By War on Want and co-financed by CATAPA, published in October 2018.



The link between employment conditions and suicide: a study of the electronics sector in China

Economic Rights Institute and Electronics Watch, published in November 2018.



Biodiversity offsetting and other problems of the ESIA of Amulsar gold project in Armenia

By Balkani Wildlife Society, Bulgaria, on behalf of Bankwatch., published in January 2019.



Living Under Risk: Copper, Information and Communication Technologies (ICT) and Human Rights in Chile

Supported by CATAPA and War on Want, published in January 2019.



Copper with a cost – Human rights and environmental risks in the minerals supply chains of ICT: A case study from Zambia

A Swedwatch investigation, published 6 May 2019.



Towards a fairer ICT supply chain
A CATAPA and SNU investigation, published in May 2020



Occupational poisoning in ICT manufacturing
A Swedwatch investigation, published in June 2020.



Linking the Bolivian Minerals to the European Industry
From CATAPA and Oblaten - Solidaridad Nación Uru (SNU). Published in November 2020.



Hazardous chemicals in ICT-manufacturing and the impacts on female workers in the Philippines
A Swedwatch investigation, published in January 2021



Forced labour behind your screen
A Danwatch investigation, published in June 2019



Devices draining the desert: lithium mining in Chile
A Danwatch investigation, published in December 2019

make
ICT
fair

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