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Sneak preview

The high Cost of Calling

Critical Issues in the Mobile Phone Industry

November 2006

Joseph Wilde & Esther de Haan



In today's globalised world of instant communication, mobile phones are a nearly ubiquitous feature of everyday life in most developed and many developing countries. Ninety percent of the population of Western Europe now has access to a mobile phone, and mobile phone penetration in large Asian countries like China and India is rising exponentially. In 2006, mobile phone sales will reach a volume of 935 million handsets, representing a value of US \$136 billion.

This SOMO report covers the industry's top five manufacturers of mobile phones, Nokia, Motorola, Samsung, Sony-Ericsson and LG, comparing the companies' corporate social responsibility (CSR) policy with the results of SOMO-commissioned field research into the actual conditions at mobile phone factories in China, India, Thailand and the Philippines.

Despite the clean image often portrayed by this high-tech industry, SOMO's research at mobile phone production facilities reveals that conditions in handset factories can be appalling, especially among sub-tier suppliers of mobile phone component parts. This report documents the current situation in an industry where labourers work up to 72 hours a week with compulsory overtime, insecure employment contracts, unsafe factories, inadequate protection when working with hazardous materials, wages below the subsistence level, suppression of union rights and degrading treatment. This situation is complicated by the increasing complexity of mobile phone supply chains. Outsourced production of small component parts for handsets can often stretch into supply chains of nearly a dozen companies; the large name-brand companies have little oversight over this part of their supply chain and generally fail to take responsibility for the poor conditions there.

Colophon

**The High Cost of Calling: Critical Issues in the
Mobile Phone Industry
SNEAK PREVIEW**

**The full report will be available on the
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Introduction

In today's globalised world of instant communication, mobile phones are a nearly ubiquitous feature of everyday life in most developed and many developing countries. Ninety percent of the population of Western Europe now has access to a mobile phone, and mobile phone penetration in large Asian countries like China and India is rising exponentially. This fact means that mobile phones are big business and big bucks. In 2006, handset sales will reach a volume of 935 million units, representing a value of US \$136 billion. To put this in perspective, if the wireless handset sector was a country, it would have the world's 53rd largest economy, ranking just behind Ireland.

The market for mobile telephone handsets is dominated by a small number of large multinational companies. SOMO's report covers the industry's five largest manufacturers of mobile phones: Nokia, Motorola, Samsung, Sony-Ericsson and LG, comparing the companies' CSR policy with the results of SOMO-commissioned field research into the actual conditions at mobile phone factories in China, India, Thailand and the Philippines. In these four countries, SOMO and its research partners conducted interviews with a total of 203 production workers employed at 13 factories making mobile phones and component parts. Interviews were also conducted with CSR representatives of the companies as well as local management.

Despite the clean image often portrayed by this high-tech industry, SOMO's research at mobile phone production facilities reveals that conditions in handset factories can be appalling, especially among sub-tier suppliers of mobile phone component parts. This report documents the actual situation in an industry where labourers work up to 72 hours a week with compulsory overtime, insecure employment contracts, unsafe factories, inadequate protection when working with hazardous materials, wages below the subsistence level, suppression of union rights and degrading treatment. This situation is complicated by the increasing complexity of mobile phone supply chains. Although, on average, only slightly more than 30% of mobile phone final assembly is outsourced, the production of small component parts for handsets can often stretch into supply chains of nearly a dozen companies. The large name-brand companies have little oversight over this part of their supply chain and generally fail to take responsibility for the poor conditions there.

Critical Issues

SOMO's report reveals a number of violations of international standards and local laws regarding working conditions. Some of the most critical issues are highlighted here with specific examples from the research.

Toxic chemicals poison unprotected workers

In China, at Hivac Startech Film Window, which produces lenses for Motorola mobile phones, workers use a solution containing n-hexane (see box) to wash and scrub acrylic screens for mobile phones. However, Hivac does not provide face masks for the workers who are exposed to n-hexane, nor does it provide training in handling the dangerous chemical. As a result of these dangerous working conditions, in December 2005 many workers from the acrylic screen workshop began to lose their appetites, an early sign of chemical poisoning, and 12 women experienced numbness in the limbs, also clear sign of poisoning. At that time, the factory did not conduct any industrial safety investigations nor provide any treatment. Only after the workers brought their complaints to the local Labour Bureau did the factory finally, in February 2006, arrange for six of them to be hospitalised. Later on, three more workers were hospitalised. The nine workers, all of whom had been working at

the factory for more than one year, were diagnosed with n-hexane poisoning. One of the workers was 50+ days pregnant when the poisoning occurred and, because of the toxic level of n-hexane in her body, she had no choice but to follow the doctor's recommendation to abort the child. Instead of improving conditions for the remaining workers, Hivac's response was to simply replace the "white gasoline" with a "lacquer thinner" containing benzene, which is just as dangerous as, if not more dangerous than, n-hexane (see box).

N-Hexane

N-hexane (commonly called "white gasoline", "surface cleanser" or "etching solution") enters the human body via inhalation or skin penetration where it bio-accumulates. Human exposure to n-hexane can cause toxicity in peripheral nerves, muscle wasting, and atrophy. It can cause numbness to the feet and hands and muscle weakness in the feet and lower legs, which can lead to paralysis of the arms and legs. It can also cause dermatitis, nausea, confusion, jaundice, and coma. For this reason, its usage has long been prohibited in many developed countries.

Benzene

Benzene is also absorbed into the body through inhalation, and it can have effects potentially more serious than those of n-hexane. In certain circumstances, even a brief exposure to very high levels of benzene can result in death, and it is generally classified as a toxic health hazard. Exposure can result in symptoms such as skin and eye irritations, drowsiness, dizziness, headaches, and vomiting. Benzene is carcinogenic, and long-term exposure can affect normal blood production and can be harmful to the immune system. It can cause Leukaemia (cancer of the tissues that form white blood cells) and has also been linked with birth defects in animals and humans.

Namiki Precision in Thailand supplies handset motors for Nokia mobile phones. Namiki production workers do tasks, such as welding and soldering, that involve the use of many hazardous chemicals. This job requires nose-masks, but workers report that the company does not provide them. Instead, workers must purchase their own protective equipment, including mark clothes and finger gloves because the company policy is to reduce overhead costs in the factories. Instead of providing protective equipment, Namiki gives each worker one carton of milk per day, which they say will help cleanse chemicals from the body. Despite the milk's healing powers, in 2005 several workers got sick and had to go to the hospital where tests found dangerous levels of lead in their bodies. The company had told the workers that lead solder is not a dangerous material. However, lead solder contains 40% lead, a heavy metal that is extremely poisonous and can cause birth defects and death. In fact, lead is so dangerous that it has been banned from electronic products by European Union's Waste Electrical and Electronic Equipment Directive (WEEE) and Restriction of Hazardous Substances Directive (RoHS).

Excessive working hours and forced overtime

Lead times between placement of orders and delivery are extremely short in the mobile phone industry, and factories' poor planning means that workers are often required to work excessive hours so that orders may be filled on time.

In Thailand at the LTEC Ltd. factory supplying parts for Nokia handsets, official workdays are eight hours long, but in reality employees must work 12 hours per day, and most work seven days per week (including holidays). Sundays are only occasionally off when changing shifts. Cases of excessive working hours in China seem to be the norm rather than the exception. At the Giant Wireless factory that supplies handsets to Motorola, a typical day shift includes the normal eight hours of work, plus an additional four to five hours after dinner, making a total of 12 to 13 hours a day. Forcing workers to

work up to 13 hours per day by threatening them with fines and dismissal is a clear violation of workers' rights as well as Chinese labour regulations.

A worker at Giant Wireless (China):

"Five hours of overtime work each night was mandatory. Absenteeism or refusal to work overtime would be penalized by three days' wages".

A worker at LTEC (Thailand):

"How much would my monthly salary be without overtime pay? Umm.... that's impossible to answer, because if we did not work overtime, we would be fired".

A worker at Giant Wireless (China):

"Sometimes when I was queuing up for my turn to take a shower, I fell asleep on my bed. I was so tired. Suddenly it was the next morning and I went straight to work".

Lack of freedom of association and unionisation

The ICT hardware sector, including the mobile phone industry, is notorious for the lack of unions in its factories worldwide. In India, none of the current mobile manufacturing facilities have a union or interact with unions in any way. Management at LG's India factory admitted that a union would not be welcomed at their units and that they would refuse to enter into negotiation with a union. Workers at Samsung and Nokia in India reported that, upon being hired, they had been told not to join a union or engage in any union activity. In Thailand, there are no labour unions at the LTEC factory nor the Namiki unit supplying Nokia.

On the company announcement board at Namiki (Thailand):

"The workers cannot group together to gossip or say anything that will destroy the reputation of the company".

Illegally low wages

Kangyou Electronics produces mobile phone chargers that are compatible with Nokia, Motorola, Samsung, Sony Ericsson and LG handsets. In the city of Dongguan, China, where Kangyou is located, the legal minimum wage in August 2006 was US \$72.66/month. Thus, for an ordinary Chinese work month of 168 hours, the daily wage for an 8-hour shift should be US \$3.46 (US \$0.43/hour). But workers at Kangyou receive wages much lower than the minimum standard. Even the most senior production workers receive only US \$2.65/day. For overtime work on weekdays, the hourly wage should be 1.5 times the normal rate, i.e. US \$0.65. Senior workers, however, reported receiving only US \$0.41/hour. Table 1 summarizes the regular and overtime wages at Kangyou, revealing that workers' wages are far below the legally-mandated minimum wage.

Table 1: Daily Wages and Overtime Hourly Wages on Weekdays at Kangyou Electronics, August 2006

Length of Employment	Basic Daily Wage (minimum = US \$3.46)	Weekday Overtime Hourly Wage (minimum = US \$0.65)
Probation (first 3 months)	\$2.27	\$0.33
Between the 4 th and 9 th months	\$2.40	\$0.34
Between the 10 th and 16 th months	\$2.53	\$0.35
From the 17 th month onwards	\$2.66	\$0.37

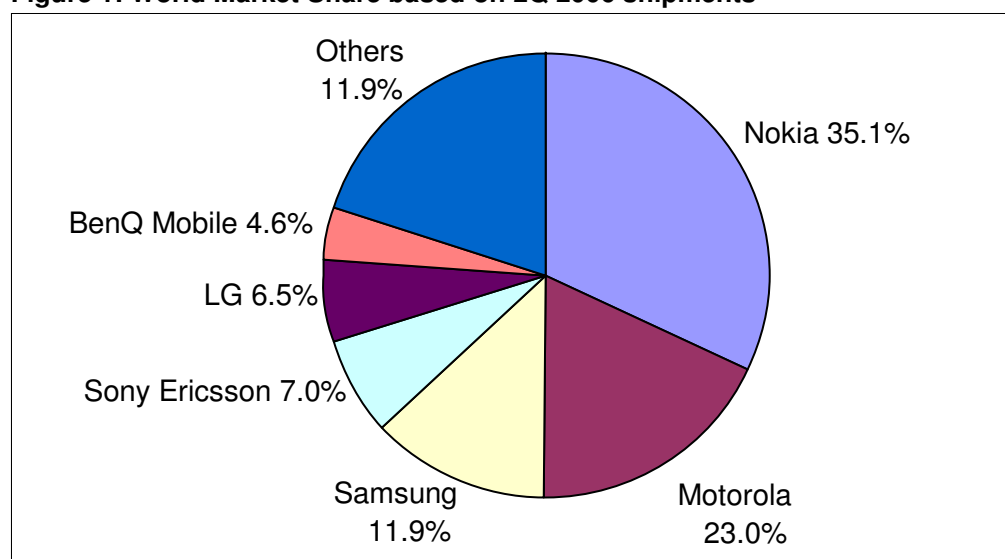
Workers without a contract

In China, workers at the Hivac Startech unit supplying Motorola claimed that they had never been given a lawful contract nor had they ever been informed of the dangers of the hazardous chemicals with which they were forced to work. In India, workers are often not given proper contractual documents or documents indicating their rights upon joining. In the case of the Flextronics unit supplying Motorola and Ericsson, workers reported that no formal contract was in place and that they only had a verbal agreement with the contractor. Workers at Nokia were given an appointment letter, but this did not occur until 2-3 months after employment had commenced. In Thailand at the LTEC unit supplying Nokia, workers said that there has never been an agreement between workers and the company concerning working regulations and that the workers are not aware of their rights. Announcements about working hours and employment policies are posted outside the nurse's room for the employees to read, but the workers do not have an personal contract.

Major Companies and CSR policies

The market for mobile telephone handsets is dominated by a small number of large multinational companies, with the industry's top five companies controlling more than 75% of the market (see Figure 1).

Figure 1: World Market Share based on 2Q 2006 shipments



Nokia

Nokia, based in Finland, is a global leader in telecommunications and the world's largest mobile phone manufacturer. Nokia produced 78.4 million handsets in the second quarter of 2006 (2Q06), up seven percent from the previous quarter and up 26% from a year ago. Nokia's market share increased to 35.1% in 2Q06, up from 33% in the second quarter of 2005. Nokia's turnover in 2005 was € 34,2 billion and net profit was € 3,6 billion. The company's mobile phone unit generates approximately 65% of its net sales. Nokia directly employed 58,874 people in 2005. Nokia outsources an estimated 20-25% of its final/box assembly, nearly matching the industry average of approximately 30% outsourced manufacturing.

Nokia adopted its initial Code of Conduct in 1997, setting out the company's vision on corporate responsibility and issues such as human rights, labour and environmental standards. The Code of Conduct maintains that, "Products and services sold under the Nokia brand require sourcing practices that uphold internationally accepted standards and legal compliance on human rights as well as workplace practices throughout the value chain". Nokia also participates in a number of voluntary CSR initiatives such as the UN Global Compact and the Global e-Sustainability Initiative (GeSI).

For suppliers, Nokia has the "Nokia Supplier Requirements" that outline ethical considerations for labour conditions and environmental requirements. Nokia monitors its suppliers' compliance with its requirements through system assessments (100 per year) and in-depth assessments (5-10 per year). With regard to its responsibility for conditions further up the supply chain, Nokia replied that it focuses on the first tier and requires its direct suppliers to set requirements for their own suppliers, adding, "It is not feasible to cover all of the tiers, not with our own representatives. And this is not our responsibility, especially if we are talking about legal requirements".

Motorola

Motorola, Inc., based in Illinois, USA, is the number two provider of mobile phones with a 23.0% share of the world market share as of June 2006. The company shipped 51.9 million handsets in the second quarter of 2006. In 2005, the company generated net sales of US \$35.26 billion and a net profit (earnings from continuing operations) of US \$4.52 billion, directly employing approximately 69,000 workers at 320 facilities in 73 countries. Motorola is comprised of three businesses, with the Mobile Devices (handsets) segment accounting for 58% of the company's net sales. Motorola currently uses around 3,600 suppliers globally for all of its products and outsources approximately 45% of its final/box assembly of mobile phones, slightly higher than the industry average.

Motorola has a detailed Code of Business Conduct and corporate citizenship policy available on its website. Motorola is also active in the Global e-Sustainability Initiative, for which the company has done a good deal of benchmarking. Motorola has a leadership role within the Supply Chain Working Group of the GeSI; Motorola's Michael Loch is the co-chair of the SCWG, and Motorola is part of the Guidance Group, which coordinates the collaborative efforts of GeSI and the Electronics Industry Code of Conduct Implementation Group.

Motorola requires its direct suppliers to abide by certain principles such as no forced labour, no child labour, anti-discrimination, freedom of association, fair working hours and wages, safe and healthy working condition, and environmental sustainability. The company verifies compliance with its standards by conducting audits among direct suppliers, focusing on suppliers in "high risk" areas. In 2005, Motorola conducted more than 75 assessments of direct suppliers. Although Motorola does not proactively monitor sub-tier suppliers, the company notes, "If we become aware of a problem in a second or third tier supplier, we will investigate and engage at that level". The problem with this approach is that Motorola and its competitors rely on outside groups such as NGOs to alert them of problems at individual factories (such as in the Hivac Startech case) rather than making proactive and structural changes in policy that would have an effect on the entire supply chain.

In addition to Nokia and Motorola, SOMO's report provides similar overviews and profiles of CSR policy for Samsung, Sony Ericsson, and LG.

The Role of Mobile Network Operators

Mobile network operators (MNOs), also known as wireless service providers, are a telephone companies that provide services for mobile phone subscribers. Mobile network operators have significant influence on the mobile telephone market because they provide the telecommunication service that allows people to communicate using their mobile telephone handsets. Thus, if there is no mobile network operator in a particular country or region, there is no market for mobile telephones. Mobile network operators are, in a sense, large scale consumers (and re-sellers) of mobile handsets. As a result, although only a fraction of their revenues come from handset sales, network operators view handset manufacturers as their most important suppliers. Given the position of MNOs at the end of the supply chain, the policies of MNOs toward suppliers of mobile phones are particularly important for the handset manufacturing industry. SOMO's report examines the CSR policies of the Netherlands' three biggest mobile network operators, KPN, Vodafone and Deutsche Telekom, with particular focus on these companies' policies toward suppliers.

Based on interviews with the companies' CSR departments, SOMO's research reveals that although MNOs have relatively extensive codes of conduct for their own operations, they rely too heavily on their direct suppliers to monitor themselves for compliance with CSR standards and to pass on the standards and requirements to their own suppliers. Too often, MNOs trust suppliers to monitor themselves (and their own suppliers) for compliance with legal and sustainability requirements, arguing that they only do business with big-name suppliers like Nokia and Motorola in which, the MNOs claim, they can be confident that CSR policies and practices meet the highest standards. However, as the field research in this study reveals, conditions at even the largest, most renowned handset manufacturers often fail to meet internationally recognized minimum standards. Furthermore, the greatest risk of poor labour and environmental conditions lies at the sub-tier suppliers that make the parts that go into mobile phone handsets, yet none of the MNOs acts sufficiently upon its social responsibility to improve conditions beyond direct suppliers. MNOs emphasize that their liability ends at their direct suppliers, but these companies must begin to take responsibility for the entire value chain of the products they buy and sell.

Industry Landscape and Trends

SOMO's report also depicts the current landscape of the mobile phone industry and analyses a number of major trends. These trends include slowing but sustained market growth, market segmentation, industry consolidation, the growing importance of the low-end market, and globalisation of the supply chain. One of the most important landscape features and trends in the industry is outsourcing.

As in other sectors of the information and communications technology (ICT) industry, outsourcing of handset manufacturing operations is on the rise. However, the outsourcing trend is considerably less prominent with mobile phones than with other electronics, such as PCs, and thus the wireless handset sector continues to exhibit a relatively high degree of vertical integration. While mobile-phone OEMs are expected to outsource a significant portion of their final assembly to contract manufacturers over the next few years, the majority of manufacturing will likely be kept in house. In 2005, between 20% and 34% of worldwide wireless handset final assembly was outsourced, compared to 85% outsourcing of notebook computer production. Sony-Ericsson is the largest outsourcer in the industry, with nearly 66% of its final assembly outsourced. However, a number of the industry's largest OEMs have chosen to keep the bulk of production in-house in order not to reveal their intellectual property on mid and

high-complexity phones. For example, Motorola outsources approximately 45% of final assembly, and industry leader Nokia outsources only about 20% of its handset assembly. Other major companies are even stricter in their outsourcing policy: LG outsourced only three percent of its annual shipments of wireless handsets to contract manufacturers in 2005, and Samsung conducted 100% of its mobile phones final assembly in-house.

There are a number of reasons that mobile phone outsourcing is lower than in other sectors of the ICT industry, especially PCs. To begin with, the mobile phone industry is much less standardized than the PC industry, and it is unlikely that ODMs will be able to master all mobile phone design platforms and provide full contract manufacturing services to the OEMs as they do in the PC sector. Furthermore, wireless handsets are, in many ways, more complex than PCs, and the handset industry is driven by constant technological innovation. The development of new generation mobile phones requires immense research and development resources, and, while the design capabilities of contract manufacturers are increasing, only OEMs are likely to have deep enough pockets to pioneer new technologies. Despite these facts and the current relatively low level of outsourcing in the mobile phone industry, the phenomenon is clearly on the rise. Due to rapidly changing markets and technologies, OEMs are under constant pressure to increase flexibility by scaling production volumes up or down and reduce manufacturing costs. In this regard, outsourcing production to contract manufacturers (both EMS and ODMs) has a number of advantages for OEMs.