

TCO Certified Smartphones versus Fairphone

A comparison of sustainability criteria

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April 2015

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SÜDWIND

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Abbreviations

CAP	Corrective Action Plan
CFTI	Conflict Free Tin Initiative
CoC	Code of Conduct
CSO	Civil society organisation
CSR	Corporate Social Responsibility
DRC	Democratic Republic of Congo
EICC	Electronic Industry Citizenship Coalition
EMAS	EU Eco-Management and Audit Scheme
EPA	Environmental Protection Agency
ETI	Ethical Trading Initiative
FLA	Fair Labor Association
FoA	Freedom of association
GeSI	Global e-Sustainability Initiative
GM	Grievance mechanism
ICT	Information and Communication Technology
ILO	International Labour Organization
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
MSI	Multi-stakeholder initiative
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
RoHs	Restriction of Hazardous Substances Directive
TCO	Tjänstemännens Centralorganisation – The Swedish Confederation of Professional Employees
VAP	Validated Audit Process
WEEE	Waste Electrical and Electronic Equipment recycling

About the organisations

Centre for Research on Multinational Corporations (SOMO)

The Centre for Research on Multinational Corporations (SOMO) is an independent, not-for-profit research and network organisation working on social, ecological and economic issues related to sustainable development. Since 1973, the Amsterdam-based organisation has been investigating multinational corporations and the consequences of their activities for people and the environment around the world. SOMO supports social organisations by providing training, coordinating networks and generating and disseminating knowledge on multinational corporations in a context of international production, trade, financing and regulation.

SOMO is involved in the 'Made with Care' working group of Fairphone. This working group focuses on working conditions in the manufacturing phase and consists of several labour experts in the fields of academia, trade unions and civil society. SOMO hosts the GoodElectronics Network and is project partner in Electronics Watch.

<http://www.somo.nl/>

Südwind

Südwind was founded in 1997 in Austria as a non-profit non-governmental organisation (NGO) engaged in PR, information and educational work in the field of international development. Südwind is financed through national and international public funds and private contributions. It is committed to environmentally, economically and socially sustainable development, and campaigns for a narrowing of the gap between North and South.

Südwind is one of three NGO partners in the project "Jede Gemeinde zählt". This project is working on the implementation of social criteria in public procurement in Dortmund, Wels and Trebic, as well as establishing a European network for socially responsible public procurement.

<http://www.suedwind-agentur.at/>

GoodElectronics

The GoodElectronics Network accommodates networks, organisations and individuals that are concerned about human rights, including labour rights and sustainability issues in the global electronics supply chain. Members include trade unions, grassroots organisations, campaigning and research organisations, academia and activists.

The GoodElectronics Network has a vision of a global electronics industry characterised by adherence to the highest international human rights and sustainability standards throughout the entire production cycle, from the mining of minerals used in electronics products to the manufacturing phase, and the recycling and disposal of electronics waste.

<http://goodelectronics.org/>

Summary

In May 2013, two initiatives offering a fair smartphone stepped into the spotlight. The certification body TCO Development announced Samsung as the first big brand with a fair smartphone: the Samsung Galaxy S4. Samsung had successfully applied for the sustainability certification for smartphones created by TCO Development. At the same time, the Dutch social enterprise Fairphone announced pre-orders for the first batch of Fairphones.

This was great news for socially conscious consumers and responsible public procurers: suddenly they had the choice between two sustainable smartphones. But this also raised the question, are these phones equally fair?

The confusion was compounded when civil society organisations (CSOs) criticised the sustainability certification of the Samsung Galaxy S4. They argued that Samsung is a company that has been at the forefront in denying basic workers’ rights, such as the right to organise, to unionise and the right to a safe working environment.

Fairphone was embraced and applauded by many, but also faced criticism: it was argued that fair and sustainable production is simply not possible in China. So why did Fairphone choose China to manufacture the Fairphone?

The Austrian organisation Südwind commissioned the Centre for Research on Multinational Corporations (SOMO) to compare the TCO Certification for Smartphones with Fairphone to help socially conscious public buyers and consumers in Europe to make an informed buying decision when it comes to mobile phones. The publication of the comparison has been made possible by GoodElectronics.

SOMO reviewed the underlying sustainability criteria of TCO Certified Smartphones and Fairphone and compared the outcomes. Of the 34 sustainability criteria selected by SOMO, TCO Certified scored beyond current industry standards on seven criteria; 11 were scored as being equivalent to standard industry level; and 16 of them were not addressed sufficiently. Fairphone scored beyond current industry standards on 20 criteria. On nine criteria, Fairphone scored on industry standard level and five criteria were not sufficiently addressed.

Scores	TCO	Fairphone
Sustainability criteria not addressed sufficiently	16	5
Sustainability criteria on the same level as industry standards	11	9
Sustainability criteria addressed beyond industry standards	7	20

The emerging picture is that the smartphones certified by TCO Development are not necessarily more sustainable than uncertified smartphones. This can be explained by the strategy of TCO Development: the current criteria for socially responsible manufacturing are designed “to be achievable by 30–50 per cent of the IT industry and are therefore set at a basic level”.

The outcome that TCO Development does not take a front runner position on social criteria makes the claim to offer a ‘fair’ smartphone rather unsubstantiated. If TCO Development really wants to lead the drive toward a more sustainable approach, and a ‘fairer’ smartphone, they should include social requirements that go beyond legislation or industry standards.

Fairphone has scored better than TCO Development. The majority of the selected criteria are addressed by Fairphone beyond industry standards, which makes Fairphone a more sustainable choice than the average smartphone on the market.

Fairphone scored particularly well in terms of responsible mining, including conflict minerals, and reducing environmental and social impacts. But they also scored well regarding e-waste, their Code of Conduct, taking a multi-stakeholder approach, supply chain approach and transparency. Worth mentioning is that they publish the supplier list, the price structure of the phone, audit reports and improvement plans.

1. Introduction

1.1. Aim of the report

A growing group of consumers is interested in buying a smartphone that is produced in a sustainable way. Sustainable production is also stimulated by European governments. With the introduction of sustainable procurement guidelines, governments are trying to enforce socially responsible public procurement. This includes the procurement of Information and Communication Technology (ICT) products such as smartphones. The idea is that companies supplying the public sector should be able to demonstrate that they are respecting human rights and are taking full responsibility for their entire supply chain.

When searching for a sustainable smartphone two initiatives quickly come to the forefront. Both these initiatives seem to offer a 'fair' phone. In May 2013, the certification body TCO Development announced Samsung as the first big brand with a fair smartphone: the Samsung Galaxy S4.¹ Samsung had successfully applied for the sustainability certification for smartphones that is created by TCO Development. In the same month, the Dutch social enterprise Fairphone launched pre-orders for the first batch of 'Fairphones'. Most of the Fairphones were eventually delivered in January 2014.

The aim of this report is to help socially conscious public procurers and consumers in Europe to make an informed buying decision when buying a 'fair' smartphone. SOMO has investigated both these initiatives – the 'TCO Certification for Smartphones' and the 'Fairphone – by reviewing the underlying sustainability criteria. SOMO analysed whether both initiatives are currently offering a smartphone that is more sustainable than the average smartphone on the market.

This report takes on the challenge of comparing these very different initiatives with each other. Fairphone is a social enterprise. Their goal is to work towards creating a fairer economy by participating as a producer of smartphones and trying to make positive changes in the supply chain from within the industry. TCO Development, on the other hand, is a global certification body for sustainable IT produced by various brands. The basic idea is that SOMO has compared the sustainability criteria and methodology underlying the TCO Certification for Smartphones with the sustainability policies and practices under which the Fairphone is produced.

The report provides an insight into the extent to which the pre-selected sustainability criteria are addressed by both initiatives. These criteria are identified as important by the GoodElectronics Network, which consists of organisations and individuals that are concerned about human rights, including labour rights and environmental issues in the global electronics supply chain. Together these organisations have formulated a set of demands on the electronics industry, from the mining of minerals used in electronics products to the manufacturing phase and the recycling and disposal of electronics waste.

As well as looking at whether a sustainability issue is addressed at all by Fairphone or TCO Development, SOMO also reviewed *how* the issue is addressed: is it on the same level as the

¹ Website TCO Development, Press release 16 May 2013, "Samsung kommt als erstes mit einem fairen Smartphone – Galaxy S4", <<http://tcodevelopment.de/neuheiten/samsung-kommt-als-erstes-mit-einem-fairen-smartphone-galaxy-s4/>>, (20 April 2015).

majority of the players in the industry (industry standard) or as a front runner in the industry (beyond industry standard)?

Background of the report

Südwind is one of three NGO partners in the project ‘Jede Gemeinde zählt’ (which means ‘every community counts’). Within this project Südwind is responsible for presenting a study on the level of social responsibility in smartphones and has commissioned SOMO to make this comparison of the TCO Smartphone Certification with the Fairphone project. The GoodElectronics Network was involved in the creation and publication of this report.

1.2. The methodology for comparison

Preferred definition of CSR used by SOMO

SOMO uses the definition of Corporate Social Responsibility (CSR) as formulated by the Dutch CSR coalition MVO Platform², which is as follows:

“CSR is a result-driven process whereby a company assumes responsibility across all its business operations for the social, ecological and economic consequences of its activities, and is accountable and transparent towards its stakeholders regarding these issues”.

MVO Platform regards the following principles as essential for an effective operationalisation of CSR:

- ❑ a normative framework (Code of Conduct);
- ❑ a multi-stakeholder approach in the execution and external control of CSR;
- ❑ good governance;
- ❑ a supply chain approach;
- ❑ independent verification by an organisation that has the confidence of all relevant stakeholders;
- ❑ transparency and reporting;
- ❑ a grievance procedure.²

These operational principles are used in this report as guidance in the review of the sustainability criteria underlying the TCO Certification for Smartphones and the Fairphone.

For the comparison of the sustainability criteria, SOMO has drawn up a table distinguishing three main parts:

- ❑ The design (combined with the phase of usage);
- ❑ The production phase and;
- ❑ The operationalisation of CSR.

SOMO has used a number of CSR rankings for electronics as reference: the Eco-score of Vodafone,³ the Greenpeace Guide to Greener electronics,⁴ and Rank a Brand – an initiative that works together with the Dutch chapter of Friends of the Earth for the ranking of electronics brands.⁵

² Website MVO Platform, CSR Frame of Reference 2012, <http://mvoplatfom.nl/publications-en/Publication_3738/>, (6 January 2015). This CSR coalition consists of 30 Dutch CSOs and trade unions.

³ Vodafone has developed its own sustainability score for smartphones at product level. See the Vodafone Australia website for an English version, <<http://www.vodafone.com.au/aboutvodafone/corporateresponsibility/ecorating/>>, (6 January 2015).

⁴ Website Greenpeace, What we do, <<http://www.greenpeace.org/international/en/campaigns/climate-change/cool-it/Campaign-analysis/Guide-to-Greener-Electronics/>>, (6 January 2015).

⁵ Website Rank A Brand, <<http://blog.rankabrand.org/2014/05/fairphone-shakes-up-electronics-brands/>>, (6 January 2015).

The operational principals of the CSR frame of reference are also used as guidance for the selection of the sustainability criteria, next to the 'Common demands on the electronics Industry', formulated by the GoodElectronics Network.⁶

All sustainability aspects included by SOMO are relevant for smartphones and are also present in at least one of the CSR rankings on electronics. However, the criterion on grievance mechanisms is not included yet in any CSR rankings, and the same applies for the criterion on responsible taxation. SOMO has added these two aspects because of the growing international interest in these issues.

Other aspects that are not included are ergonomics or product safety such as luminance levels, chemical emissions (release of nickel to the user's skin), and electrical safety; some of these aspects are already covered by EU regulations (electrical safety regulations EN/IEC 60 950, EN/EIC 60065). Other considerations taken into account included that these aspects are not most relevant for smartphones, although they play an important role in the sustainability criteria of TCO Development.

See Annex 1 for the table format including all sustainability aspects.

For a comparison of the sustainability aspects, SOMO distinguished three scores:

Score colour	Description of score
Red	This sustainability aspect is not publicly addressed.
Yellow	This sustainability aspect is addressed on the same level as the industry standard.
Green	This sustainability aspect is addressed beyond the industry standard.

Explanation of the scores:

- ❑ Red is given when SOMO could not find any information about the sustainability aspect in documents in the public domain (i.e. on the websites of Fairphone or TCO Development). In this case, the conclusion has been drawn that the smartphone initiative has insufficiently addressed this aspect.
- ❑ Yellow is given when the sustainability aspect is addressed in the public domain but is also regulated or required by law (by local laws in production countries, EU laws or US laws) or when it is estimated by SOMO that the majority of the smartphones on the market are produced under the same conditions. In that case it is considered sufficient but on the same level as the industry standard.
- ❑ Green is given when the sustainability aspect is addressed more progressively than average and the initiative can be regarded as a front runner as far as this aspect is concerned.

2015).
⁶ Website GoodElectronics, About, <http://goodelectronics.org/news-en/goodelectronics-common-demands-on-the-electronics-industry-update/at_download/attachment>, (8 April, 2015).

Both organisations, TCO Development and Fairphone, have been given the opportunity to comment on the draft report in order to avoid factual misunderstandings and to give them the opportunity to react to the comparison.

In an email dated 20 February 2015, Niclas Rydell, Director of TCO Certified, formulated his objection to the comparison between Fairphone and the TCO Certification for Smartphones based on sustainability criteria. The main objection (summarised by the report's author) is that the business model of Fairphone is entirely focused on pushing the boundaries in socially responsible manufacturing, which makes it unfair to compare regular players in the industry with Fairphone. Rydell: *"Fairphone should be considered an absolute front runner, a pioneer, regarding socially responsible manufacturing, maybe representing the top 1% of the industry. To the opinion of TCO Development Fairphone should rather be used as a reference in this study. Then the rest of the industry could be benchmarked against Fairphone's achievements."*

In the opinion of TCO Development, Fairphone is operating under different conditions than other IT brands (in terms of small volumes, short production times, a limited number of suppliers and producing for a group of consumers that share Fairphone's vision that socially responsible manufacturing is the most important aspect of the product that make them accept delays, etc.) As a result, they have much bigger opportunities to push the boundaries of socially responsible manufacturing. It will probably be very difficult to upscale their business to the same level as the rest of the brands in the IT industry. According to Rydell: *"What would be interesting to include in this report is what the different initiatives (TCO Certified Smartphones and Fairphone) actually achieve in a longer and bigger perspective. For example, one can wonder how many factory workers will be affected when TCO Development improves its criteria every three years in comparison to the number of factory workers that are affected when Fairphone improves its production."*

Rydell highlights that the fact that even Fairphone does not manage to get a green score on all sustainability criteria shows that SOMO has included unrealistic demands. Demands that *"are currently unfortunately not realistic to expect of any other phone brand today operating under completely different circumstances. Having these aspects in the report only gives the reader misleading expectations of what the industry is capable of today"*. Two concrete examples include the criteria on responsible taxation and grievance mechanisms.

2. TCO Development

2.1. About TCO Development

TCO Development is a company⁷ owned by TCO (Swedish: Tjänstemännens Centralorganisation). TCO is the second biggest of Sweden's three major trade union confederations; the umbrella organisation for 18 trade unions in Sweden for professional and other qualified employees within both the private and the public sectors. TCO Development does not have a profit requirement from their owners and the organisation's mission is to promote the development of ICT products in a more sustainable direction. Their strategy is to affect change through working with the large actors on the market. By making demands on their manufacturing and controlling that these demands are met, they are encouraging more sustainable production.⁸

TCO Development is the company behind TCO Certified, an international sustainability certification scheme for ICT products. TCO Certified owes its existence to the increasing use in the 1980s of computer displays at workplaces and the health impacts of this. Poor ergonomic design and high levels of electro-magnetic emissions were problematic, along with high energy consumption. TCO Development developed a method for measuring electro-magnetic emissions from computer displays and set up a certification system. This certification has since been further developed from an ergonomic label to an environmental label to a sustainable label. It now includes criteria aimed at reducing the negative social and environmental effects of ICT products during their manufacture, use and end of life handling. Its aim is to address the poor working conditions during manufacturing and the growing e-waste stream.⁹

The services of TCO Development are focused on institutional buyers and not on individual consumers. They advise organisations on how to include TCO Certified criteria in the purchasing specifications or purchasing contracts. Their aim is to contribute to organisations' sustainable ICT programmes and to influence the ICT industry to take greater responsibility for product sustainability throughout a product's life cycle.

2.2. TCO Certified products

There are TCO Certified products in eight categories: displays, notebooks, tablets, smartphones, desktops, all-in-one PCs, projectors and headsets. A certification is valid for two years and is given on a product level and not on a company level. Each product category has its own criteria; these criteria are updated every three years. The criteria are developed with the input of various stakeholders, including stakeholders representing users, industry, interested organisations and independent experts.

Currently 27 brands have certified more than 2,100 ICT product models, according to TCO Certified. The brands are Acer, AOC, ASUS, BenQ, Dell, Eizo, Founder, Fujitsu, Genuine, HannsG, HCL, HP, Hyundai, Iiyama, Lanix, Lenovo, LG, Medion, NEC, Philips, Samsung, SIS, Terra, Vecom, Versus and Viewsonic (see also Table 1).

⁷ TCO Development is registered in the Swedish business register Bolagsverket as TCO Development AB under number 556396-5937. AB stands for Aktiebolag, which is the Swedish term for "limited company" and is equivalent to Ltd. or Plc.

⁸ Website TCO Development, <http://tcodevelopment.com/files/2013/12/Report-Analysis_of_critique_directed_at_the_certification_of_Samsung_Galaxy_S4-december_9_2013.pdf>

⁹ Website TCO Development, <<http://tcodevelopment.com/about-tco-development/>>

Table 1: TCO Certified product models

Product category	Number of certified product models	Number of brands	Brands represented
Displays	1,916	27	All 27
All-in-one PCs	39	5	AOC, HP, Lenovo, Philips, Samsung
Desktops	16	1	Lenovo
Notebooks	83	4	a.o. ASUS, Lenovo, Samsung
Smartphones	12 ¹⁰	1	Samsung
Tablets	12	1	Samsung
Total	2,119	27	

Source: TCO Development¹¹

Of all TCO certifications, 93% concern displays.¹² The Samsung Galaxy S4 was the first (and for 20 months also the only) certified smartphone by TCO. Since January 2015 another smartphone model by Samsung has also been certified by TCO: the Samsung Galaxy Note 4 (certified until January 2017). The certification period of the Samsung Galaxy S4 runs from May 2013 until May 2015.

2.3. The methodology of TCO Certified

Criteria

Brands submitting products for TCO Certified must ensure the product model and its manufacturing meet criteria in these main areas:

- Socially responsible manufacturing
- Environmental management system
- Reduction of hazardous substances in product and packaging
- Climate, energy efficiency
- Ergonomic design and visual quality
- Health, safety and emissions
- Product lifetime, take back

TCO Certified is a Type 1 Environmental Label, according to the International Organization for Standardization (ISO) and is based on the principles in the ISO 14024 standard.

TCO Development explains that the current criteria for socially responsible manufacturing for TCO Certified Smartphones are designed “to be achievable by 30–50 per cent of the IT industry and are therefore set at a basic level. When roughly 50 per cent of products on the market in a given product category satisfy the requirements in TCO Certified, the criteria are then successively revised and enhanced to further drive development”.¹³

In 2015, TCO Development will revise the criteria for TCO Certified. Until 19 May 2015, a draft criteria document is open for stakeholder comments. This released draft contains the revised

¹⁰ These 12 models include two models of the Samsung Galaxy Note 4 and the 10 remaining ones are all Samsung Galaxy S4 models.

¹¹ Email Niclas Rydell, Director of TCO Development, 20 February 2015.

¹² In total 751 certifications are supplied of which 696 are for displays (email, Niclas Rydell).

¹³ Website TCO Development, <http://tcodevelopment.com/files/2013/12/Report-Analysis_of_critique_directed_at_the_certification_of_Samsung_Galaxy_S4-december_9_2013.pdf>, page 7.

criteria for displays; the expectation is, however, that the majority of these criteria will be similar for smartphones. The draft criteria for smartphones will be released later in the year.¹⁴

Brands can choose one of three methods to comply with the social criteria:

1. The brand owner is a member of the Electronic Industry Citizenship Coalition (EICC) and provides documented proof of third party audits conducted at production facilities of TCO Certified products.
2. The brand owner is SA8000 certified or carrying out production at SA8000 certified facilities and provides documented proof of third party audits conducted at production facilities of TCO Certified products.
3. The brand owner completes a self-documentation, "Own Work" option, consisting of a questionnaire provided by TCO Development. Also required is documented proof of third party audits conducted at production facilities of TCO Certified products.

If compliance with any of the options is not possible at the time of application, brands can choose a fourth option, which is a 12-month grace period to show compliance.¹⁵

The three main verification tools for assessing compliance with the social criteria consist of: the implementation of a Code of Conduct (CoC); third party factory audits at Tier 1 (final assembly) facilities; and Corrective Action Plans (CAP) or addressing identified non-conformities.

A hired reviewer verifies all the documents from the brand to prove that their CoC and the social audit from the factory, along with the CAP, are authentic and complete and reports to TCO Development. This reviewer has gone through an acceptance process by TCO Development and is paid by the brand that wants to certify a product. Manufacturing facilities are also subject to follow up spot checks, both announced and unannounced.¹⁶

2.4. CSO criticism about the certification of Samsung

Box 1: Critique directed at the certification of Samsung Galaxy S4

In a public statement dated 5 June 2013, more than 20 global health and justice groups demanded that TCO Development should withdraw its sustainability certification award for Samsung's S4 Smartphone. The certification was called "green washing of the worst kind". The groups argued that "*Samsung is a company which has been at the forefront consistently in denying basic workers' rights such as the right to organise, unionise and a right to a safe working environment*".¹⁷

Samsung's record regarding sustainability issues is indeed not very positive. Samsung has been severely criticised in South Korea and elsewhere for its dismal occupational safety and health record. According to global health and justice groups, more than 180 young Samsung workers have developed occupational diseases such as cancer and 70 of them have already died after having been exposed to hazardous chemicals.

In May 2014, one of Samsung's CEOs issued an official apology for the first time and promised to compensate the (families of) sick and deceased workers. However, Samsung did not acknowledge that the conditions in its

¹⁴ Website TCO Development, <<http://tcodevelopment.com/new-generation-tco-certified/>>, (20 April, 2015).

¹⁵ Website TCO Development, <<http://tcodevelopment.com/news/the-state-of-socially-responsible-manufacturing-in-the-it-industry/>>, page 14.

¹⁶ Website TCO Development, <<http://tcodevelopment.com/news/the-state-of-socially-responsible-manufacturing-in-the-it-industry/>>

¹⁷ Website AMRC, <<http://amrc.org.hk/system/files/Global%20health%20and%20justice%20groups%20demand%20that%20TCO%20withdr aw%20Samsung%20certification.pdf>>

factories were directly responsible for the illnesses and deaths.¹⁸ This implies that Samsung still does not take full corporate social responsibility for this issue.

Year after year, Samsung scores highly in nominations for the worst company of the year. This includes the Public Eye Award, a prize given to firms that cause the greatest damage to people and the environment. In 2012, Samsung ranked third after the companies Vale and Tepco.¹⁹ For this year's 'Eyesore of the Year' (2015), Samsung is one of the six nominated companies.²⁰ According to the global union IndustriALL, Samsung has a long history of disrespect towards labour and human rights. On 5 December 2013, the IndustriALL Executive Committee members unanimously approved a petition condemning Samsung for its union busting policy. They asked Samsung to give up its "union-free" policy, to recognise trade unions and to stop trade union repression.²¹

TCO Development responded to the criticism related to health and safety violations by saying that *"their analysis indicates that the criticism presented concerned alleged non-compliances in manufacturing that existed before the current certificate became valid (prior to May 2013)".* TCO Development indicated that *"additional reports received from Samsung show that functioning routines to prevent and respond to workplace accidents and illness in the manufacturing of Samsung Galaxy S4 are in place, in accordance with the certification requirements".*

Related to the critique about a lack of freedom of association and collective bargaining at Samsung factories, TCO Development said: *"The investigation has verified that the manufacturing of the certified product fulfills the requirements in TCO Certified Smartphones 1."* This conclusion is based on the submitted documentation [by Samsung] and factory inspections conducted before the certification of the Galaxy S4.²²

2.5. Critical remarks about the methodology of TCO Development

It is important to bear in mind that the three main verification tools that form the pillars of TCO Development's methodology for assessing compliance with the social criteria (the implementation of a Code of Conduct, the third party audits and the corrective action plans) are not very progressive and merely follow current practices in this industry.

In particular, the current industry practice of third party auditing does not have the confidence of relevant stakeholders and is not regarded as credible enough. TCO Development limits the stakeholders in the verification process to the suppliers and the buyers (the Brands) and the information being evaluated for the certification is received from the Brands and from third party audits at their suppliers. However, credible monitoring and auditing include the involvement of trade unions and/or local labour groups.²³ Being transparent about the audit results is also crucial to gaining credibility for the verification processes.²⁴

¹⁸ Website Business Insider, <<http://www.businessinsider.com/samsung-sick-worker-apology-2014-5?IR=T>>

¹⁹ Website Human Rights Monitor South Korea, <<http://www.humanrightskorea.org/2012/samsung-voted-as-third-worst-company-worldwide/>>

²⁰ Website Schandfleck. The Network Social Responsibility (NeSoVe) nominated Samsung because of work accidents and health hazards in the supply chain of Samsung. From 2007 to August 2014, 232 cases of occupational diseases in the Korean IT Industry are directly or indirectly attributable to Samsung, see <<http://www.schandfleck.or.at/en/>>

²¹ Website IndustriALL, <<http://www.industriall-union.org/industriall-executives-condemn-samsung-for-union-busting>>

²² Website TCO Development, <http://tcodevelopment.com/files/2013/12/Report-Analysis_of_critique_directed_at_the_certification_of_Samsung_Galaxy_S4-december_9_2013.pdf>

²³ See also SOMO's reference to the CSR Frame of Reference in the paragraph on the methodology.

²⁴ According to TCO Development, it is probably impossible to find a verification that has the full confidence of all parties. An independent accredited third party auditor paid by TCO Development that has no contractual relationship to the brand or the workers' representatives is, according to TCO Development, the most neutral and independent verification that is practically available today. TCO Development says that *"through the license agreement in TCO Certified, TCO Development has a unique position to access detailed sensitive information from brands and from third party social audits at the factories they use. A prerequisite for this is that TCO Development does not make this information officially available to the general public, trade unions or NGOs. This information together with the fact that these brands do not want to lose the certifications of their products creates a unique way for TCO Development to monitor and progressively*

One example of a recurring problem with the current third party auditing is that the violation of freedom of association is almost never detected by the auditing methodology. In general, there are no recorded non-conformances of this kind, although it is the most important issue brought forward by the workers and the local workers' organisations.²⁵ Other big problems such as not paying living wages, the use of unsafe chemicals during production and job insecurity are also not detected by the current third party auditing methodology.

Also, TCO Development relies very much on the implementation of corrective action plans agreed on by the factory management and the auditor(s) to improve working conditions. The new report of TCO Development (The State of Socially Responsible Manufacturing in the IT Industry, August 2014) confirms that many Corrective Action Plans (CAPs) were judged to be less effective to fix certain labour rights violations: "*Of the audits reviewed for inclusion in this report, less than half of the CAPs were labeled 'effective'*".^{26 27}

The three pillars that TCO Development relies on are based on the self-regulation methodology of the industry. This has not proved to be very successful in achieving improvements regarding major workers' rights violations, such as: excessive working hours; lack of time off; underage workers; high proportion of migrant workers; wage deductions for disciplinary reasons; lack of worker health and safety provisions; forced labour; and freedom of association. The shortcomings of this method have existed for some time already.²⁸ Inspections and audits do not ensure compliance and are limited in their ability to identify violations.²⁹

2.6. The assessment of TCO Certified Smartphones on sustainability criteria

Reading Guidance for the assessment table:

- ❑ The first column of Table 2 contains the sustainability criteria selected by SOMO on the basis of various methodologies of different experts (ICT company experts and NGOs. See Annex 1 for further explanation).
- ❑ The second column contains the *literal text* of the mandates (the sustainability requirements) formulated by TCO Certified in their criteria document for smartphones: 'TCO Certified Smartphones 1.0', May 2013.³⁰

drive the improvement of the working conditions at factories producing TCO Certified products.' Email Niclas Rydell, 20 February 2015.

²⁵ Esther de Haan, Freedom of Association in the electronics industry, <http://somo.nl/publications-nl/Publication_3804-nl>

²⁶ Website TCO Development, <<http://tcodevelopment.com/news/the-state-of-socially-responsible-manufacturing-in-the-it-industry/>>, page 22.

²⁷ TCO Development comments on this that, if a corrective action plan is judged to be less effective by the third party expert appointed by TCO Development, this means that the third party expert and the factory management have different opinions on what is an effective solution to the problem. Because the judgement is given by an expert who has not visited the factory, it is not absolutely certain that the original corrective action is less effective. This judgement is only intended as a risk assessment guide to all concerned, which will prove its worth at the closure audit or spotcheck. The judgement of CAPs is a way for TCO Development to focus the spotchecks where it is considered that there is the most risk of failure. Email Niclas Rydell, 20 February 2015.

²⁸ See reports about 'Beyond monitoring', such as "Beyond auditing", by IDH <<http://www.idhsustainabletrade.com/site/getfile.php?id=17>>

²⁹ TCO Development comments that the strategy of TCO Certified is to drive the whole industry forward and therefore a method must be chosen that is realistic for most of the industry to adopt today. Email Niclas Rydell, 20 February 2015.

³⁰ See <http://tcodevelopment.com/files/2013/05/TCO_Certified_Smartphones_1.0.pdf>

- ❑ The added comments in grey are included by SOMO and are interpretations of the mandates of TCO. These interpretations substantiate the score.
- ❑ The score is either: Red (the sustainability aspect is not publicly addressed); Yellow (addressed on level of industry standards – majority of companies operate on this level); or Green (the aspect is addressed beyond industry standards).

Table 2: TCO Review

Sustainability criteria	The mandates of the TCO Certification for Smartphones	TCO score
Design / Use³¹		
<p>A sustainable design can include special features to improve its performance during use. Selected aspects:</p> <ul style="list-style-type: none"> - Energy use 	<p>‘To reduce energy consumption from the Smartphone the external power supply shall meet at least the International Efficiency Protocol requirement for level V.’ (Mandate A.6.3.1)</p> <p>Comment by SOMO: This level is demanded by the US Environmental Protection Agency (EPA) and is equivalent to the Energy Star version 2.0. It is therefore considered industry standard</p>	
<ul style="list-style-type: none"> - Use of recycled materials in the smartphone (metals and plastics) 	<p>Comment by SOMO: TCO Development supports the use of recycled plastic. The mandates restricting the use of hazardous chemicals are relaxed when it concerns recycled plastic.³² Involving the mandates A.6.4.2, A.6.4.3, A.6.4.4. and A.6.4.5</p>	
<ul style="list-style-type: none"> - Phasing out hazardous chemicals (PVC, BFR, beryllium, antimony and phthalates) <p>Comment by SOMO: The EU Restriction of Hazardous Substances Directive (RoHs) (in effect July 2006) restricts the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr6+), Polybrominated biphenyls (PBB), Polybrominated diphenyl ether (PBDE) and they are phased out by many brands</p>	<ul style="list-style-type: none"> - The Smartphone shall not contain mercury (Mandate A.6.4.1) - The Smartphone shall not contain cadmium, lead and hexavalent chromium (Mandate A.6.4.2) - Plastic parts weighing more than 5 grammes shall not contain flame retardants or plasticizers that contain organically bound bromine or chlorine. Exempted are printed wiring board laminates, electronic components and all kinds of cable insulation. (Mandate A.6.4.3) 	

³¹ The sustainability aspects of design and use were partly overlapping and therefore integrated.

³² “TCO Development supports the use of recycled plastic. To avoid making it more difficult to use recycled plastic, exceptions to this requirement can be accepted.” This related to the requirements of restricting the use of: Cadmium (Cd), lead (Pb) and hexavalent chromium (CrVI), Halogenated substances, and Non-halogenated substances. <http://tcodevelopment.com/files/2013/05/TCO_Certified_Smartphones_1.0.pdf>, page 67.

<p>already. Mandate A.6.4.1, A.6.4.2 and A.6.4.3. are therefore industry standard according to SOMO's methodology. It should be noted that the TCO Development mandate includes mercury-free FPD lamps, which are exempted in Restriction of Hazardous Substances Directive (RoHS)</p> <p>TCO Certified supports the use of recycled plastics, therefore exceptions are made when recycled plastic is used containing these chemicals</p> <p>The mandates regarding PVC, BFR, antimony and phthalates are beyond industry standard and substantiate the green score</p>	<ul style="list-style-type: none"> - The Smartphone shall not contain PBB, PBDE and HBCDD (Mandate A.6.4.3) - The following non-halogenated flame retardants shall not be used in plastic parts weighing more than 5 grammes: <ul style="list-style-type: none"> - Antimony(III) oxide (Sb₂O₃), CAS: 1309-64-4 - Tri-o-cresyl phosphate, CAS: 78-30-8 (Mandate A.6.4.4) - Plastic parts in the Smartphone weighing more than 5 grammes shall not contain chlorine or bromine as a part of the polymer (Mandate A.6.4.5) - The Smartphone shall not contain phthalates [various mentioned], (Mandate A.6.4.7) 	
<ul style="list-style-type: none"> - Availability of smart or sustainable charging systems such as solar chargers or eco-friendly chargers 	<p>No info</p>	
<ul style="list-style-type: none"> - Improvement of recyclability 	<p>With material coding there is a better possibility for plastics to be recycled and used in new IT equipment. Plastic parts weighing more than 5 grams shall be material coded in accordance with ISO 11469 and ISO 1043-1, -2, -3, -4. Such parts shall be listed in the table at Section A.6.4.5. (Mandate A.6.6.1)</p>	
<ul style="list-style-type: none"> - Active policy to increase lifespan: easy repair with easy ordering of spare parts, online repair manuals 	<p>The brand owner shall guarantee the availability of spare parts for at least three years from the time that production ceases. (Mandate A.6.5.1)</p> <p>Comment by SOMO: The requirement for spare parts is an active policy to increase lifespan</p>	
<ul style="list-style-type: none"> - Active policy to increase lifespan: longer warranty period (>2 yrs) 	<p>The brand owner shall provide a product warranty for a period of at least one year (Mandate A.6.5.1)</p> <p>Comment by SOMO: The warranty period is not beyond two years</p>	
<ul style="list-style-type: none"> - Replaceable batteries 	<p>Batteries shall be rechargeable and when necessary, replaceable by the end user or a qualified professional to increase product lifetime (Mandate A.6.4.8)</p>	

Mining		
- Leadership or participation in responsible sourcing of minerals related to fuelling conflicts (tin, coltan/tantalum, tungsten, gold)	No info	
- Leadership or participation in sustainable mining initiatives of other minerals to reduce environmental and social impact on miners and communities, and/or to reduce child labour and hazardous work	No info	
- Leadership or participation in tracing minerals projects, i.e. publishing identified smelters in its supply chain	No info	
Production		
<p>Socially responsible manufacturing include efforts related to:</p> <ul style="list-style-type: none"> - Implement Code of Conduct for manufacturing 	<p>TCO Development requires a legally binding license agreement with every Brand. In this agreement the Brand commits to all mandates in TCO Certified (including the one on socially responsible manufacturing with the eight International Labour Organization (ILO) conventions). The Brand owner risks penalty fees, lost contracts and in the worst case a product recall if they are not complying with the mandate³³</p> <p>Comment by SOMO: This is one of the pillars of TCO Certified. The implementation is verified by third party auditors. The possibility for penalty fees, lost contracts and product recalls is regarded as beyond industry standard</p>	
- Health and safety measures	The brand owner shall demonstrate that the TCO Certified product is manufactured under working practices that promote good labour relations and working conditions by proving accordance with the following: [...] The health and safety legislation in force in the country of manufacture (Mandate A.7.1)	

³³ Email Niclas Rydell, 20 February 2015.

	Comment by SOMO: This is about compliance with local legislation and therefore is considered industry standard ³⁴	
- Responsible use of chemicals in production, more specific: no use of benzene or n-hexane, in all tiers of supply chain ³⁵	No info	
- Worker training on workers' rights and Code of Conduct (CoC)	No info ³⁶	
- Leadership or participation in initiatives ³⁷ on the establishment of democratic workers' representations such as unions, workers' councils, and/or improvement of worker-management communication	No info	
- Leadership or participation in initiatives to improve working conditions (such as a living wage project or establishment of workers' funds) ³⁸ - Using the methodology of corrective action plans (CAP's) to improve working conditions is seen as industry standard	Comment by SOMO: The verification by third party audits that corrective action plans are successfully implemented is seen by TCO Development as the best available tool to improve working conditions at the moment, as long as these tools are used in the correct way and with the commitment of the brand. ³⁹ SOMO rates this as industry standard.	
- Leadership or participation in initiatives of fair purchasing practices by the brand	No info	

³⁴ TCO Development objected to this score (email Niclas Rydell, 20 February 2015). In their opinion the score should be green because of their requirement that compliance with the local health and safety legislation must be checked by third party verification. According to the methodology used, compliance with local legislation, EU- or US-laws does not make a company a front runner. Irrelevant of independent verification of the compliance.

³⁵ TCO Development objected to the inclusion of the criteria of not using benzene or n-hexane (email Niclas Rydell, 20 February 2015), because this requirement is considered unrealistic by TCO Development and should be therefore removed to avoid misleading expectations. However, it is not part of the methodology to only include sustainability criteria that some industry players already comply with. The inclusion of criteria is based on what is considered crucial for sustainable production by organisations and experts that are concerned about human rights, including labour rights, and environmental issues in the global electronics supply chain, i.e. the GoodElectronics Network.

³⁶ TCO Development objected to the red score (email Niclas Rydell, 20 February 2015), because the verification of Code of Conduct awareness among management and workers is part of the CSR Questionnaire they use (<http://tcodevelopment.com/files/2012/06/CSRQuestionnaire_TCOCertified_v10-120615_TCODevelopment.pdf>). However, being informed about the Code of Conduct is not considered the same as a worker's training on workers' rights.

³⁷ Industry initiatives as well as multi-stakeholder initiatives are meant here. This criterion is about a pro-active role of the brand to support the establishment of democratic workers' representations or improvement of worker-management communication. It is not about *permitting* initiatives.

³⁸ In the opinion of TCO Development, involvement in living wage projects or workers' funds initiatives is unrealistic and cannot be expected from mobile phone companies today. It should be therefore removed. However, it is not part of the methodology of SOMO to only include sustainability criteria that some industry players already comply with. Besides that, the Ethical Trading Initiative (ETI), for example, currently has about 70 member companies with a collective turnover of £179bn. All these companies have signed up to the ETI code, which specifies that 'living wages are paid'. Also mobile phone companies can sign up to a code that includes a living wage.

³⁹ Email TCO Development, 28 January 2015.

<p>Environmentally sustainable efforts include:</p> <ul style="list-style-type: none"> - Reduction of the amount of energy and water used to produce a phone (footprint) 	No info	
<ul style="list-style-type: none"> - Reduction of carbon dioxide and other polluting emissions (footprint) 	No info	
<ul style="list-style-type: none"> - No use of unsustainable materials in packaging 	<p>The packaging material shall not contain lead (Pb), cadmium (Cd), mercury (Hg) or hexavalent chromium (Cr6). Plastic packaging material shall not contain organically bound halogens (Mandate A.6.7.1)</p> <p>Comment by SOMO: Limit values are according to Directive 94/62/EC on packaging and packaging waste and is therefore industry standard</p>	
<ul style="list-style-type: none"> - Programme for reduction (of waste) of packaging and printed materials 	<p>Non-reusable packaging components weighing more than 5 grammes shall be possible to separate into single material types without the use of tools (Mandate A.6.7.2)</p> <p>Comment by SOMO: This mandate is intended to improve the preparation for recycling of product packaging material. It is not a programme but is clearly meant to stimulate recycling and therefore reduction of waste</p>	
<ul style="list-style-type: none"> - Use of recycled materials for packaging 	No info	
<ul style="list-style-type: none"> - Having an environmental management system: ISO 14000 certification or EMAS registration⁴⁰ 	<p>Each manufacturing plant must be certified in accordance with ISO 14001, or EMAS registered. If the product is manufactured by a third party, it is this company that shall be certified or registered. There is a 12-month grace period to obtain one of these certifications (Mandate A.6.2.1)</p> <p>Comment by SOMO: The average company in this industry has an ISO 14000 certification and this is therefore not beyond industry</p>	

⁴⁰ The EU Eco-Management and Audit Scheme (EMAS) is a management instrument developed by the European Commission for companies and other organisations to evaluate, report and improve on their environmental performance. The ISO 14000 standard addresses various aspects of environmental management. It provides practical tools for companies and organisations looking to identify and control their environmental impact and constantly improve their environmental performance.

	standard	
<p>Transport</p> <p>Availability of data on the distance travelled and mode of transport for the components used in the phone from the production site to the assembly plant. The transport of the phone to the distribution hub and stores/buyers</p>	No info	
E-waste and recycling		
- Leadership or participation in e-waste initiatives and/or recycling initiatives	With material coding there is a better possibility for plastics to be recycled and used in new IT equipment. Plastic parts weighing more than 5 grammes shall be material coded in accordance with ISO 11469 and ISO 1043-1, -2, -3, -4. Such parts shall be listed in the table at Section A.6.4.5 (Mandate A.6.6.1)	
- Take back system for recycling with recycling rate higher than 5% of the annual products sold	<p>TCO stresses the importance that manufacturers provide mechanisms to take back their equipment at end-of-life under the principle of individual producer responsibility wherein each producer must be financially responsible for managing its own brand products at end-of-life. Therefore:</p> <ul style="list-style-type: none"> - The brand owner (or its representative, associated company or affiliate) shall offer their customers the option to return used products for environmentally acceptable recycling methods in at least one market where the product is sold and where electronics take-back regulation is not in practice at the date of application (Mandate A.6.6.3). TCO Development has, however, no requirement on the take-back system being free of charge. <p>Comment by SOMO: If the product is only sold on markets with Waste Electrical and Electronic Equipment (WEEE) legislation or similar then this mandate is industry standard and enforced by legislation. However, TCO goes beyond industry standard as they require the initiative to set up a take back system in countries where such legislation is</p>	

	not in place (in at least one country.)	
Normative framework		
<p>Norms should at least include the eight ILO fundamental Conventions, plus ILO Convention 155 stipulating the right to a safe working place, ILO Convention 1 stipulating a maximum working week of 48 hours (then it is regarded as industry standard)</p> <p>Beyond industry standard: inclusion of right to living wage, right to job security</p>	<p>The Brand owner shall demonstrate the TCO Certified product is manufactured under working practices that promote good labour relations and working conditions by proving accordance with the following:</p> <ul style="list-style-type: none"> - ILO's eight core conventions 29, 87, 98, 100, 105, 111, 138 and 182 - UN Convention on the Rights of the Child, Article 32 - The health and safety legislation in force in the country of manufacture - The labour law, including rules on minimum wage and the social security protection in the manufacturing country. <p>In situations where the right to freedom of association and collective bargaining are restricted under law, workers shall be permitted to freely elect their own representatives.</p> <p>Comment by SOMO: The normative framework of TCO Certified does not include the right to a living wage and job security and is therefore not considered beyond industry standard. See also Annex 2.</p>	
<p>Multi-stakeholder approach</p> <p>This can relate to membership of a multi-stakeholder initiative (MSI), including independent NGOs or labour unions, with the collective aim of improving labour conditions and/or carrying out independent audits</p>	<p>No info</p> <p>Comment by SOMO: TCO Development mentions on their website that multi-stakeholders are asked to provide input for their criteria.⁴¹ However, this does not qualify for a multi-stakeholder initiative. Regarding the applicant, there is no mandate referring to MSIs or involvement of NGOs and labour unions in independent audits⁴²</p>	
<p>Supply chain approach</p>	<p>Reasonable effort shall be made to ensure that the requirements of this standard are</p>	

⁴¹ "Criteria development is based on scientific principles and involves multiple stakeholders and experts in an open development process." <<http://tcodevelopment.com/tco-certified/>>

⁴² TCO Development comments on this that the involvement of multi-stakeholders in independent audits is an unrealistic criterion and should be removed to avoid misleading expectations (email Niclas Rydell, 20 February 2015).

<p>A company should do everything in its power to enable, promote and carry out CSR across the entire chain</p> <ul style="list-style-type: none"> - No limitations of audits or investigations to the first tier of suppliers but include 2nd, 3rd and 4th tier suppliers as well. From extractives to e-waste - Companies should be transparent about their suppliers and production locations (public supplier list) 	<p>being met by suppliers and subcontractors throughout the supply chain (Mandate A.7.1)</p> <p>For the social audit reports and on-site inspections, the requirement is limited to the <i>1st tier production facility</i> (Mandate A.7.1)</p> <p>Comment by SOMO: Auditing of first-tier suppliers is industry standard. Various leading brands are already conducting audits at second- and third-tier suppliers. Several brands are involved in programmes involving the mining and smelters phase⁴³</p>	
<p>Independent verification</p> <ul style="list-style-type: none"> - Independent verification should be carried out by an organisation that can form an independent judgement and has the confidence of all relevant stakeholders - Audit results are made available for all stakeholders, the employees, the union and NGOs to test the CSR policy against reality⁴⁴ 	<p>The brand owner accepts that TCO Development may conduct/commission on-site inspections and receive full audit reports as part of the application to verify that the <i>Brand owner</i> is fulfilling its obligations (Mandate A.7.1)</p> <p>Comment by SOMO: Independent verification by third parties is common in this industry and therefore is not beyond industry standard. The current practice of third party audits does not have the confidence of all stakeholders; that is, including concerned NGOs and trade unions⁴⁵</p>	
<p>Transparency and (annually) reporting such as:</p> <ul style="list-style-type: none"> - environmental targets - labour conditions/code compliance 	<p>No info⁴⁶</p>	
<p>Grievance mechanism</p>	<p>No info⁴⁸</p>	

⁴³ TCO Development comments on this that Mandate A.7.1 includes responsibility throughout the supply chain and that audits at 1st tier suppliers include a control that the Code of Conduct has been informed to the next tier and that a process to implement the code exists, and the score should therefore be green (email Niclas Rydell, 20 February 2015). However, according to the methodology, this is not beyond industry standard, due to the limitation to the 1st tier and the omission of requiring the publication of production locations.

⁴⁴ TCO Development comments that it is probably impossible to find an organisation for verification that has the confidence of all relevant stakeholders. Also to make audit results available for stakeholders is considered by TCO Development as unrealistic. Both indicators for independent verification should therefore be removed to avoid misleading expectations by the reader. (Email Niclas Rydell, 20 February 2015). However, for example, all members of the Fair Labor Association (FLA), under which Apple operates, have committed themselves to publishing the audit results of the suppliers that are audited under this multi-stakeholder initiative.

⁴⁵ TCO Development objects to the statement that independent verification by third parties is common. (Email Niclas Rydell, 20 February 2015). However, audits carried out on EICC member facilities and their suppliers' facilities are completed by *independent, third-party auditors* specially trained in social and environmental auditing and the VAP audit protocol, <<http://www.eiccoalition.org/standards/assessment/validated-audit-process/>>, (accessed 10 April 2014.) The well-known audit firms are also active in the electronics industry including mobile phone production. Third party auditors active in this industry include Verité (for example EICC-GeSI audits ,the so-called Validated Audit Process (VAP)), SGS (also authorised to do EICC-GeSI audits), Veritas, TUV Sud, TUV Nord, TUV Rheinland, Intertek, TAOS, BSI, RINA, etc. Third party auditing is quite common.

⁴⁶ TCO Development comments that brands that apply for TCO certification must be transparent towards TCO Development. (Email Niclas Rydell, 20 February 2015). However, public reporting is meant within this criterion.

<p>Companies should provide access to remedies for individuals, workers and/or communities who may be impacted by their activities by establishing a grievance mechanism to handle complaints⁴⁷</p> <ul style="list-style-type: none"> - Availability of a formal way to file a complaint at the company level (hotlines, complaint boxes, email addresses) 		
<p>Responsible taxation</p> <p>This concerns the payment of all tax liabilities in the country where corporate activities are being carried out and profits are actually being made; no transfer (mis)pricing, no tax evasion and transparency concerning economic activities, profits and payments to governments</p>	<p>No info⁴⁹</p>	

2.7. How sustainable are TCO Certified Smartphones?

SOMO assessed the TCO Certified Smartphones on 34 sustainability criteria: seven were scored as being beyond current industry standards; 11 were scored as being equivalent to standard industry level; and 16 of them were not addressed sufficiently by TCO Development.

On seven sustainability aspects, the TCO requirements are more stringent than the current practice and are therefore beyond industry standard, namely the mandates regarding:

- Phasing out hazardous chemicals
- Improvement of recyclability
- Increasing lifespan by easy repair
- Replaceable batteries
- Programme for reduction (of waste) of packaging and printed materials.
- Take-back system for recycling.
- Implementation of a Code of Conduct.

⁴⁸ TCO Development objects the inclusion of this criterion because 'a grievance mechanism in the factory is unfortunately way beyond industry standard'. They consider it an unrealistic requirement and it should be therefore removed to avoid misleading expectations. (Email Niclas Rydell, 20 February 2015).

⁴⁷ The UN Guiding Principles state that companies have a responsibility to protect human rights. As part of this obligation, a grievance mechanism (GM) should be established. In accordance with Principle 31 of the UN Guiding Principles, GMs should be legitimate, accessible, predictable, equitable, transparent, rights-compatible, a source of continuous learning and based on engagement and dialogue. See: "Using Grievance Mechanisms", SOMO, March 2014 <<http://www.somo.nl/news-en/grievance-mechanisms-fail-to-give-workers-access-to-remedy>>, (6 January 2015).

⁴⁹ TCO Development also objects to the inclusion of this criterion of responsible taxation, because it is beyond industry standard, unrealistic and should be removed, etc. (Email Niclas Rydell, 20 February 2015).

The 'green' scores mainly relate to environmental and technical issues. The origin of the TCO certification (the rating of electro-magnetic emissions from computer displays and ergonomics) is rather technical. This seems to have resulted in the fact that the criteria related to environmental issues, such as recyclability, are better developed than the social issues. TCO Development wants to evolve from an ergonomic and environmental label to a sustainable label including social criteria. The final step to a good social label has not been made yet by TCO Development: regarding the social issues TCO Development mainly scores insufficient or on industry level.

The general picture that arises from the review of the sustainability criteria underlying TCO Certified is that the smartphones certified based on these criteria are not necessarily more sustainable than uncertified smartphones. This can be concluded on the basis of the scores: only seven sustainability requirements out of 34 suggest a front runner position from the applicant. These seven requirements are outnumbered by the 16 sustainability criteria that are not (or not sufficiently) addressed, and the 11 criteria that have scored as standard practice in the industry.

Moreover, the outcome that TCO Development does not take a front runner position on social criteria makes the claim to offer a 'fair' smartphone unsubstantiated. It may be expected from a 'fair' smartphone that the social criteria are set on the highest level.

The lack of a front runner position on social criteria can be explained by the strategy of TCO Development: they say that their sustainability criteria for smartphones are designed to be achievable by 30–50 per cent of the IT industry and are therefore set at that basic level.

This level turns out to be indeed very basic and this is not what a socially conscious consumer would expect from a sustainability certification scheme. It is evident that they will expect the underlying sustainability criteria to be beyond industry standard.

Selection of sustainability criteria that are not addressed

Sixteen sustainability criteria included in the assessment methodology are not addressed by the TCO Certification for Smartphones. Some of these are highlighted below:

- ❑ None of the three criteria related to responsible mining are addressed by TCO Development (conflict minerals, reducing environmental and social impact of mining, and mineral tracing).
- ❑ No criteria related to the responsible use of hazardous chemicals during production are used.
- ❑ Hazardous chemicals are only addressed related to the environment; it is an omission not to have proactive measures to prevent harm from chemical poisoning during production.
- ❑ No footprint requirements regarding energy and water used to produce a phone.
- ❑ No footprint requirements regarding carbon dioxide and other polluting emissions.
- ❑ No transparency requirements.
- ❑ No requirement regarding a grievance mechanism in place at the supplier level.

Concluding remarks

The basic level of the sustainability criteria set by TCO Development for certification do not substantiate what TCO Development says on its website, which reads as follows: "*The criteria levels in TCO Certified are aimed at **leading the drive** toward a more sustainable approach to IT products throughout the life cycle. For this reason several requirements in TCO Certified go beyond legislation or industry standards.*"

However, it should be noted that the seven requirements that are found to be beyond industry standards (out of 34) mainly concern 'green' aspects (environmental) and not 'fair' aspects (social).

TCO Development can even be called rather conservative, as they do not want to include sustainability criteria that are not already practised in the industry. Various criteria that are not uncommon in other industries or even in this industry – such as a living wage standard, the publication of audit results and grievance mechanisms at the factory level – are considered to be unrealistic by TCO Development and they argue they should therefore not be required. TCO Development does not seem to be aware of the fact that several electronics brands are much more progressive already on social issues than they are.

If TCO Development really wants to lead the drive toward a more sustainable approach, and a 'fairer' smartphone they should include more social requirements that go beyond legislation or industry standards. Currently the social standards of TCO Development are too conservative to push the boundaries of socially responsible manufacturing.

3. Fairphone

3.1. About Fairphone

Fairphone started in 2010 as an awareness-raising project by three Dutch organisations: Waag Society, Schrijf-Schrijf and the Dutch branch of the international development organisation ActionAid. The project and related research ran for three years. The project started with the idea of making a smartphone to raise awareness about conflict minerals in consumer electronics and the wars that the mining of these minerals is fuelling in the Democratic Republic of Congo (DRC). In 2011, the focus was broadened by including the entire supply chain, from mining and manufacturing right through to e-waste.

Fairphone was officially established as a social enterprise based in Amsterdam in 2013.⁵⁰ The goals were then established more firmly; by creating a smartphone themselves, they wanted to use commercial strategies to achieve social impact at every stage of the value chain, from sourcing and production to distribution and recycling. At the same time, Fairphone remains an awareness-raising tool: the production of the phone serves to uncover production systems, to address challenging problems and to stimulate discussions.⁵¹

Fairphone does not claim that their first smartphone is entirely fair. Fairphone has to be looked at as a tool to achieve positive steps forward in the fair production of smartphones, addressing social and ecological issues at every stage of the value chain by making new interventions. They say themselves that Fairphone is still far from being “fair”, but it’s a starting point for their step-by-step journey. They have defined a number of interventions to address some of the many social and ecological standards that can be improved in the production of smartphones.

These interventions do not include avoiding the DRC and boycotting its minerals (and instead sourcing coltan in Australia). Or avoiding the world’s biggest mobile-phone producing country, China, with all its labour rights violations and instead producing in Europe. It is about trying to make progressive and alternative steps towards making the existing industry practices more sustainable and not creating an alternative system.

Currently Fairphone has sold 60,000 phones (only in Europe) and has 33 staff members.⁵² Top-tier suppliers are located in nine different countries.⁵³

Since May 2013, when the pre-orders started, Fairphone has been independently financed by the sales of the phone. When Fairphone was still a project within Waag Society, it received funding from Waag, Stichting Doen and the NCDO (about €300,000 over 2.5 years). Fairphone also received €10,000 as winner of the ASN Bank World Prize. It also received €18,000 from Bethnal Green Ventures to participate in a startup boot camp in London, helping Fairphone to formulate its business strategy. When Fairphone received €400,000 in private funding, it started to roll out this business strategy in the form of a social enterprise. They used the private funding to cover operational costs until the launch of the pre-orders.⁵⁴

⁵⁰ Fairphone B.V., registration number KvK55901964. ‘Stichting Fairphone’ (foundation) is also registered.

⁵¹ Website Fairphone, ‘Fairphone Fact sheet’, <<http://www.fairphone.com/wp-content/uploads/2014/07/Fairphone-fact-sheet.pdf>> (14 January 2015).

⁵² Figures updated by Fairphone, email Fairphone, 16 February 2015.

⁵³ Website Fairphone, <<http://www.fairphone.com/roadmap/>>, (accessed 12 April. 2015).

⁵⁴ Website Fairphone, <<http://www.fairphone.com/wp-content/uploads/2014/07/Fairphone-fact-sheet.pdf>>

3.2. The methodology of Fairphone

The 'step-by-step' methodology is focused on activities and interventions within five core action areas: mining, design, manufacturing, lifecycle and social entrepreneurship.

Mining

Fairphone's ambitions for mining include the integration of as many responsibly mined minerals into their supply chain as possible, with a special focus on areas of high-risk of conflict, like the DRC. This is done by, for instance, buying from local initiatives and partners with established multi-stakeholder initiatives that can trace minerals directly to their source.

Design

Fairphone's ambitions for design include extending the smartphone's longevity, from influencing the lifespan to increasing repairability, but also to enable reuse and to support safe recycling. For instance by involving stakeholders in the design phase (users, suppliers, factory workers) and using fairer materials.

Manufacturing

This concerns the achievement of lasting improvements in working conditions and employee wellbeing. For instance by stimulating and increasing genuine employees' representations and strengthening employees' ability to request, negotiate and implement improvements.

Lifecycle

This concerns the full lifespan of mobile phones, including use, reuse and safe recycling. One part of this concerns the encouragement of consumers to replace their phones only when they have reached the end of their usable life, the support and establishment of initiatives that provide safe recycling programmes, and participation in programmes that collect and safely recycle e-waste. Ultimately, Fairphone wants to reuse recycled materials in their supply chain.

Social entrepreneurship

This action area refers to the way Fairphone operates as a company with a social mission. As part of its social mission, Fairphone wants to offer total transparency about the production processes, the steps they take and their failures along the way. The attempt to create transparency in the business operations, production, communication and financial overview provides consumers with a better understanding of where their products come from and how they are made.

Fairphone carries this out by publishing their list of suppliers, the price structure of the phone, the audit reports and the improvement plans at their final assembly production partner. Revealing every step of the process is meant to raise awareness and allow consumers to make informed decisions about what they buy.⁵⁵

⁵⁵ Website Fairphone, <http://www.fairphone.com/wp-content/uploads/2014/09/Fairphone_Cost_Breakdown_and_Key_Sept2013.pdf>

3.3. CSO Criticism about Fairphone

Box 2: Critique directed at Fairphone

First of all, criticism is directed at the use of the word ‘fair’ or rather the misuse of the word. This is because it would mislead people: giving the impression that Fairphone’s smartphone is already 100% fair, when in reality it is considered by the producers as ‘a starting point’ in the step-by-step journey to a fairly produced phone. The argument put forward is that one should not call a phone a ‘fairphone’ while the process to produce a fairer smartphone is still in its infancy.

For example, this argument is put forward by Germanwatch (“Der Name Fairphone suggeriert, dass ein komplett faires Handy hergestellt wird” (*The name Fairphone suggests that a completely fair mobile phone is being produced.*)⁵⁶ In this context they explain that the first batch of Fairphones (25,000 sold for the price of €325 each) contained two responsibly sourced minerals – tin and tantalum – out of the 30 minerals used inside a smartphone. The same criticism was put in less friendly terms on the blog Faire Computer: “*The name Fairphone has always been irritatingly pretentious.*” One of the arguments put forward on this blog is that it should be noted that “conflict-free” is not the same thing as “fair”.⁵⁷

Second, the argument has been made that fair and sustainable production is simply not possible in China and that Fairphone would do a better job to produce in Europe where there are mature industrial relations. For example, this argument is put forward in the magazine *Solidarity*: “*Why choose a low-wage country that also happens to be completely union-free?*”. It says that by opting for non-union manufacture in China, and trying to placate critics with sops like “third-party social assessment” and “open discussions between workers and their employers”, Fairphone is ducking the serious issues. A truly fair fairphone would carry the one label that really mattered: a union label.⁵⁸

An article on the blog Faire Computer also argues against the non-union manufacture; the elected workers’ representation for the Worker Welfare Fund cannot be considered a replacement for representation through a real labour union with ongoing collective negotiations; it could even act as a hindrance to such a representation.⁵⁹

Thirdly, the argument is made that, although small improvements after the audit have taken place in the factory, fundamental changes regarding the labour conditions are neither seen with big mobile phone brands nor with Fairphone (for example, regarding working hours, the wages, or union representation). In this respect, it is concluded that, due to their small production volume, Fairphone is not able to attach conditions to their order and that the objective results are small.⁶⁰

Fairphone explains the choice to produce in China by saying that they want to make the existing industry practices more sustainable by making interventions in China and in worker representation processes. They are trying to improve working conditions in China, they argue, and “*they don’t want to leave out countries and workers that are hit hardest.*”⁶¹ The most important intervention to achieve better working conditions is the creation of the Worker’s Welfare Programme. This includes factory assessments, factory improvements, the establishment of the Worker Welfare Fund, and the democratic election of worker representatives to manage this fund and discuss working conditions. Trainings were given to the workers about how to organise the elections and currently training is being given to support the worker representatives in their tasks.⁶²

⁵⁶ Website Germanwatch, Startseite, Publikationen, ‘Im Germanwatch-Blickpunkt: Das Fairphone’, <<http://germanwatch.org/de/download/8883.pdf>>, (accessed 12 April 2015).

⁵⁷ Blog Faire Computer, <<http://blog.faire-computer.de>>, “Fairphone-an-unfulfilled-promise”, by Sebastian Jekutsch, <<http://blog.faire-computer.de/fairphone-an-unfulfilled-promise/>>, (accessed 12 April 2015).

⁵⁸ ‘How fair is Fairphone?’, Eric Lee, *Solidarity*, 297, 25 September 2013, <<http://www.workersliberty.org/solidarity-297-25-september-2013>>, (accessed 12 April 2015).

⁵⁹ Fairphone: An unfulfilled promise <<http://blog.faire-computer.de/fairphone-an-unfulfilled-promise/>>

⁶⁰ Blog Faire Computer, <<http://blog.faire-computer.de>>, “Fairphone-an-unfulfilled-promise”, by Sebastian Jekutsch, <<http://blog.faire-computer.de/fairphone-an-unfulfilled-promise/>>, (accessed 12 April 2015).

⁶¹ Email Fairphone, 16 February 2015.

⁶² See <<https://www.fairphone.com/projects/worker-welfare-fund/>>

3.4. Critical remarks about Fairphone’s methodology

For each production phase (mining, production, e-waste and recycling), Fairphone makes use of an advisory group consisting of stakeholders with expertise on CSR issues such as NGOs and trade unions and academics based both locally and globally. These groups advise Fairphone on the interventions to make, which have often not been tried before.

Fairphone wants to make positive changes in a complex industry with these interventions as a small newcomer in the sector. The various ‘games’ on margins that are played in this industry by the Brands, the assembly factories and components suppliers are known by insiders but are rather inconceivable for a newcomer. Since Fairphone is an inexperienced player in the field, and since its interventions are partly based on the methodology of trial and error, success is not guaranteed. It remains to be seen over the longer term whether Fairphone’s interventions are more successful than those of some of the big brands that have taken a front runner role in certain sustainability issues. For example, there is no guarantee that the interventions in the production phase will lead to the payment of a living wage or to the presence of a genuine trade union.

3.5. The assessment of Fairphone on sustainability aspects

Sustainability criteria	Assessment of Fairphone	score
Design / Use		
A sustainable design can include special features to improve its performance during use. Selected aspects: - Energy use	Energy use in the sense of transport fuels: Their project of 3D-Printed Fairphone Cases is an experiment in local distribution and on-demand production – eliminating the need for long-distance shipping and producing excess stock. ⁶³ The optional charger of Fairphone has a standby energy use of 0.03W. This meets the highest (5-star) rating of the EU and Industry IPP Project concerning energy efficiency index for mobile phones. ⁶⁴	
- Use of recycled materials in the smartphone (metals and plastics)	Fairphone: <i>“Our long-term goal is to directly reuse the metals obtained from scrap phones in future generations of our Fairphone.”</i> ⁶⁵ Fairphone: <i>“We use post-consumer recycled polycarbonate in the housing of our phones, which means much less CO₂ during production. This means that the phone casing (30% of the weight of the phone) will be made from recycled plastics, from discarded plastic products.”</i> ⁶⁶	

⁶³ See <<http://www.fairphone.com/projects/3d-printed-fairphone-cases/>>

⁶⁴ See <<http://rankabrand.org/electronics/Fairphone>>

⁶⁵ See <<http://www.fairphone.com/projects/responsible-e-waste-recycling/>>

⁶⁶ See <<http://www.fairphone.com/2013/09/05/production-update-delivery-timeline/>> (see news August).

<p>- Phasing out hazardous chemicals (PVC, BFR, beryllium, antimony and phthalates)</p>	<p>The Fairphone is RoHs compliant, based on the EU Restriction of Hazardous Substances Directive, as is required by law. This directive restricts the use of the following substances: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ether.</p> <p>Fairphone: <i>"We also have a PVC free phone which means that the possibility of existence of plastificers like phalates is very low."</i>⁶⁷</p> <p>Comment by SOMO: The EU RoHs Directive (in effect July 2006) restricts the use of lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr6+), polybrominated biphenyls (PBB), polybrominated diphenyl ether (PBDE) .</p> <p>Being RoHs compliant is industry standard. Fairphone does not mention anything about BFRs on its website. There is also no clarity about beryllium, antimony and phthalates.</p>	
<p>- Availability of smart or sustainable charging systems such as solar chargers or eco-friendly chargers</p>	<p>Fairphone has made a cable charger optional for consumers, to reduce unnecessary waste and greenhouse gas emissions by giving people a cable that they might already have in their homes.⁶⁸ Fairphone uses a universal type charger.</p> <p>Comment by SOMO: one could call the charger smart in the sense that the choice during the design for the micro USB port is smart, because many people already have a charger that fits this port and they don't need to buy another. The fact that the charger is not included automatically is progressive. However, it is not a smart charger in the sense that is a solar or eco-friendly charger, which is the used criterion.</p>	
<p>- Improvement of recyclability</p>	<p>No information found on the website that indicates that the design of the phone is focused on its recyclability.</p>	
<p>- Active policy to increase lifespan: easy repair with easy ordering of spare parts, online repair manuals</p>	<p>Fairphone has multiple policies in place to increase the product life-span, such as providing consumers with easy repair manuals to prolong the life of their products. Fairphone works with iFixit, for online repair manuals and videos and functions as service centre for repairs. They also sell a selection of spare parts in their online shop to allow</p>	

⁶⁷ See <<https://fairphone.zendesk.com/hc/en-us/articles/201134936-What-s-Fairphone-s-position-on-materials-I-may-be-concerned-with->>

⁶⁸ See <<http://www.fairphone.com/2013/08/01/whats-in-a-life-cycle-assessment/>>

	users to repair their phone or replace the parts that most frequently break. ⁶⁹	
- Active policy to increase lifespan: longer warranty period (>2 yrs)	Fairphone offers only the normal, legal, two-year warranty period. ⁷⁰	
- Replaceable batteries	Fairphone: “we want a smartphone with a longer-than-average life. We started by making the Fairphone easy to open and understand, with components like removable (and replaceable) batteries.” ⁷¹	
Mining		
- Leadership or participation in responsible sourcing of minerals related to fuelling conflicts (tin, coltan/tantalum, tungsten, gold)	<p>Fairphone joined the Conflict Free Tin Initiative (CFTI), founded in October 2012. The CFTI is a multi-stakeholder initiative that is comprised of a closed supply chain in which minerals can be traced from the origin of the ore all the way to the manufacturer. The CFTI works with iTSCi, a traceability scheme implemented and monitored by PACT, an international development NGO. The primary tin mining sites are located in the province of South Kivu in the DRC.</p> <p>The Fairphone contains conflict-free tin from CFTI-certified mines.⁷²</p> <p>The conflict-free tantalum in Fairphones’ capacitors is sourced through the Solutions for Hope initiative and comes from the DRC’s southern province of Katanga.</p>	
- Leadership or participation in sustainable mining initiatives of other minerals to reduce environmental and social impact on miners and communities, and/or to reduce child labour and hazardous work	<p>Fairphone: “We also want to move beyond conflict-free to make an even greater impact on local communities. That means finding responsible business partners who are addressing the issues in mining at a broader scale, including child labor, health and safety, wages and general working conditions.”⁷³</p> <p>Furthermore, Fairphone and ActionAid have worked on a feasibility study for setting more fair conditions for cobalt (used in batteries) from the south of DRC, with the goal of creating a fairtrade certified pipeline⁷⁴</p> <p>Fairphone is also engaging with FairTrade and FairMined to include fair gold in the next</p>	

⁶⁹ See <<http://www.fairphone.com/projects/spare-parts-and-self-repair/>>

⁷⁰ See <<https://fairphone.zendesk.com/hc/en-us/articles/201166786-Warranty-and>Returns-for-your-Fairphone>>

⁷¹ See <<http://www.fairphone.com/projects/spare-parts-and-self-repair/>>

⁷² See <<http://www.fairphone.com/projects/tin/>>

⁷³ See <<http://www.fairphone.com/2014/10/02/research-trip-visiting-tin-tantalum-and-tungsten-mines/>>

⁷⁴ See <<http://www.fairphone.com/2013/01/16/solutions-for-hope-partnership/>>

	phone. Fairphone also partners in the IDH Banka Tin Working Group. ⁷⁵	
- Leadership or participation in tracing minerals projects, i.e. publishing identified smelters in its supply chain	For tin and tantalum, Fairphone publishes information about the mines and smelters it comes from. For other minerals, this information is not available. ⁷⁶	
Production		
Socially responsible manufacturing include efforts related to:	Fairphone has performed a third party audit in their manufacturing factory using the ETI Code of Conduct.	
- Implementation of CoC for manufacturing	Comment SOMO: there is no indication found that the implementation itself is more progressive than industry standard.	
- Health and safety measures	Health and safety is part of the ETI code. (Adequate steps shall be taken to prevent accidents and injury to health arising out of, associated with, or occurring in the course of work, by minimising, so far as is reasonably practicable, the causes of hazards inherent in the working environment). ⁷⁷	
- Responsible use of chemicals in production, more specific: no use of benzene or n-hexane, in all tiers of supply chain	Fairphone does not mention whether benzene and n-hexane is banned in the final assembly of products. Nor does Fairphone mention whether benzene and n-hexane is banned in the full production chain.	
- Worker training on workers' rights and CoC	There is an ongoing training program at the Guohong factory. There is also continuous engagement with supervisors and workers through third parties, as well as a Fairphone team-member being regularly on-site. ⁷⁸ For example, in May 2014, training was completed at Guohong to introduce the concept of the Worker Welfare Fund to workers, as well as explain the voting structure and representative election process. ⁷⁹ Training for management on developing an internal CR structure is given.	
- Leadership or participation in initiatives on the establishment of democratic workers' representations such as unions, workers' councils and/or improvement of workers-management communication	Fairphone: "A crucial part of our efforts is to empower workers with collective bargaining skills and improve worker representation channels, thereby providing a platform for behavioral change in the factory. To do this, we are working on forming a Worker Welfare	

⁷⁵ See <<https://milieudefensie.nl/english/pressreleases/hp-acer-lenovo-take-action-against-irresponsible-tin-mining-in-indonesia>>

⁷⁶ See <<http://free.sourcemap.com/view/6988>>

⁷⁷ See <<http://www.ethicaltrade.org/eti-base-code>>

⁷⁸ E-mail Fairphone, 23 April, 2015.

⁷⁹ See <<http://www.fairphone.com/projects/worker-welfare-fund/>>

	<p><i>Fund, a fund that will be governed by factory worker representatives in dialogue with factory management, and Fairphone”.</i></p> <ul style="list-style-type: none"> - The first worker representatives were elected by the factory employees in June 2014.⁸⁰ 	
<ul style="list-style-type: none"> - Leadership or participation in initiatives to improve working conditions (such as a living wage project or establishment of workers’ funds) 	<p>The first Worker Welfare Fund proposal is approved. Workers voted overwhelmingly in favour of a special bonus for the entire workforce at Guohong</p> <p>After the sales of the first Fairphone in 2013, the initial capital of the Worker Welfare Fund totals \$125,000.⁸¹</p>	
<ul style="list-style-type: none"> - Leadership or participation in initiatives of fair purchasing practices by the brand 	<p>Fairphone: <i>“Our ultimate goal is to build a smartphone that offers clear, fair deals to everyone involved.”</i></p> <p>Comment by SOMO: The initiative to start Fairphone as a social enterprise was to practice fair and responsible purchasing itself at all levels of the supply chain.</p>	
<p>Environmentally sustainable efforts include:</p> <ul style="list-style-type: none"> - Reduction of the amount of energy and water used to produce a phone (footprint) 	<p>Fairphone has carried out a Life Cycle Assessment for identifying ways to reduce its footprint. Their ambition is to further reduce their environmental impact with every version of the Fairphone⁸²</p> <ul style="list-style-type: none"> - The Dual SIM capability is to reduce the amount of phones in use <p>Comment by SOMO: No measures or targets mentioned related to energy or water usage. A water and/or land use footprint, is not published.</p>	
<ul style="list-style-type: none"> - Reduction of carbon dioxide and other polluting emissions (footprint) 	<p>Fairphone has carried out a Life Cycle Assessment for identifying ways to reduce their carbon footprint. Their ambition is to further reduce their environmental impact with every version of the Fairphone.</p> <p>Comment by SOMO: a carbon footprint is available.⁸³</p>	
<ul style="list-style-type: none"> - No use of unsustainable materials in packaging. 	<p>The packaging contains under 10% VOC (volatile organic compounds)⁸⁴</p> <p>Comment by SOMO: this is required by law.</p>	
<ul style="list-style-type: none"> - Programme for reduction (of waste) of packaging and printed materials 	<p>Minimal packaging was one of the points of departure at the design phase of the Fairphone.⁸⁵</p>	

⁸⁰ See <<http://www.fairphone.com/projects/worker-welfare-fund/>>

⁸¹ See <<http://www.fairphone.com/projects/worker-welfare-fund/>>

⁸² See <<http://www.fairphone.com/projects/life-cycle-assessment/>>

⁸³ See <<https://www.fairphone.com/2015/01/22/first-fairphones-environmental-impact/>>

⁸⁴ See <<http://www.fairphone.com/2013/06/28/production-overview-of-june-and-july/>>

⁸⁵ See <<http://www.fairphone.com/2013/05/17/three-years-in-the-making-road-to-a-fairer-phone/#cleardeals>>

	Comment by SOMO: The packaging is minimal.	
- Use of recycled materials for packaging	Fairphone uses a combination of recycled core material plus finishing of Forest Stewardship Council-certified soya-based ink. ⁸⁶	
- Having an environmental management system: ISO 14000-certification or EMAS registration on supplier level	No info.	
Transport Availability of data on the distance travelled and mode of transport for the components used in the phone from the production site to the assembly plant. The transport of the phone to the distribution hub and stores/buyers	Fairphone: “ <i>Transportation has a major impact on climate change, which mainly stems from transporting the Fairphone from China to the Netherlands by air.</i> ” The contribution of transport to climate change relative to other substantial contributors is 17%. ⁸⁷ Comment by SOMO: The life cycle assessment will be instrumental in making future choices. ⁸⁸	
E-waste and recycling		
- Leadership or participation in e-waste initiatives and/or recycling initiatives	- In early 2013, Fairphone started its partnership with Closing the Loop to address recycling and e-waste in Ghana - Sales of the first Fairphone have provided the funds to collect at least 75,000 scrap phones in Ghana, and to send them to Belgium for safe recycling ⁸⁹ - Educate consumers on the importance of recycling (or reusing) mobile phones - Chargers & accessories are NOT included by default, in order to reduce waste	
- Take-back system for recycling with recycling rate higher than 5% of the annual products sold	Fairphone has great ambitions towards a circular economy, and has teamed up with the organisation Closing the Loop: “ <i>For every Fairphone we sell and bring into the system we take approximately three old mobile phones out (25,000 times 3 = 75,000 phones!).</i> ” This makes the take-back recycling rate of Fairphone 300% ⁹⁰ Fairphone works with partner Teqcycle; to send back (donate) old phones to ensure these are properly recycled or given a new life on the secondhand market. For Fairphone owners, there is free shipping from 26 EU countries and Switzerland to Teqcycle’s processing centre in Munich. The	

⁸⁶ See <<http://www.fairphone.com/2013/06/28/production-overview-of-june-and-july/>>

⁸⁷ See <<http://www.fairphone.com/2015/01/22/first-fairphones-environmental-impact/>>

⁸⁸ See <<https://www.fairphone.com/projects/life-cycle-assessment/>>

⁸⁹ See <<http://www.fairphone.com/projects/responsible-e-waste-recycling/>>

⁹⁰ See <<http://www.fairphone.com/2013/11/21/taking-back-phones-for-a-circular-economy-e-waste-in-ghana/>>

	revenues will be used to support the costs of the Recycling Programme or redistributed towards Fairphone's e-waste programme in Ghana. ⁹¹	
<p>Normative framework</p> <p>Norms should at least include the eight ILO fundamental Conventions, plus ILO Convention 155 stipulating the right to a safe working place, ILO Convention 1 stipulating maximum working week of 48 hours (then it is regarded as middle of the road)</p> <p>Beyond industry standard: inclusion of right to living wage, right to job security</p>	<p>TAOS carried out a social assessment in August 2013 – a first for the factory in Chongqing. This was based on the Ethical Trading Initiative's (ETI) Code of Conduct.⁹²</p> <p>Comment by SOMO: The ETI Code includes the right to a living wage and the right to job security, which is considered to be beyond industry standard by the methodology (see also Annex 2).</p>	
<p>Multi-stakeholder approach</p> <p>This can relate to membership of a multi-stakeholder initiative (MSI), including independent NGOs or labour unions, that collectively aims to improve labour conditions and/or carry out independent audits</p>	<p>Fairphone shows leadership in the creation of the advisory group "Made with care" in which stakeholders are represented such as a trade union (IG Metall), NGOs (SOMO) and local experts (Chinese University, ERI – Economic Rights Institute)</p> <p>Comment by SOMO: Fairphone participates in MSIs related to the mining phase</p>	
<p>Supply chain approach</p> <p>A company should do everything in its power to enable, promote and carry out CSR across the entire chain</p> <ul style="list-style-type: none"> - No limitations to the first tier of suppliers but include 2nd, 3rd and 4th tier suppliers as well, from extractives to e-waste - Companies should be transparent about their suppliers and production locations (supplier list) 	<p>Fairphone publishes its list of suppliers as completely as possible to show where the phone's components come from. Fairphone promotes CSR interventions on all levels of its supply chain, from extractives to e-waste</p>	
<p>Independent verification should be carried out by an organisation that can form an independent judgement and has the confidence of all relevant stakeholders</p> <ul style="list-style-type: none"> - Audit results are made available for all stakeholders, the employees, the union and NGOs to test the CSR policy against reality 	<p>TAOS carried out a social assessment in August 2013. This was based on the Ethical Trading Initiative's (ETI) Code of Conduct. TAOS is a local Chinese organisation and was selected by the Made with Care Workgroup in which several stakeholders are represented. The findings have been documented in the TAOS Assessment report, which can be downloaded from the website. A list of social compliance issues and the resulting action plan can also be downloaded.⁹³</p>	
<p>Transparency and (annual) reporting on CSR performance, such as:</p> <ul style="list-style-type: none"> - environmental targets 	<p>Fairphone publishes its 'Bill of Materials' and list of suppliers as completely as possible to show where the phone's components come from. They publish the social assessment</p>	

⁹¹ See <<http://www.fairphone.com/recycling/>>

⁹² See <<http://www.fairphone.com/2013/12/10/made-with-care-social-assessment-report/>>

⁹³ See <<http://www.fairphone.com/2013/12/10/made-with-care-social-assessment-report/>>

<p>- labour conditions/code compliance</p>	<p>report from the third party auditor. Also a list of social compliance issues and the resulting action plan can be downloaded.⁹⁴</p>	
<p>Grievance mechanism Companies should provide access to remedies for individuals, workers and/or communities that may be impacted by their activities by establishing a grievance mechanism to handle complaints</p> <p>- Availability of a formal way to file a complaint at a company level (hotlines, complaint boxes, email addresses)</p>	<p>In the audit report which is made public through the website of Fairphone it can be read that although a grievance mechanism is established (suggestion boxes) the interviewees reported that there is no effective grievance and communication channel established at the factory.^{95 96}</p>	
<p>Responsible taxation This concerns the payment of all tax liabilities in the country where corporate activities are being carried out and profits are actually being made; no transfer (mis)pricing, no tax evasion and transparency concerning economic activities, profits and payments to governments</p>	<p>No info</p>	

3.6. How sustainable is Fairphone?

Of the 34 sustainability criteria assessed by SOMO, Fairphone scored as a front runner on 20 criteria. On nine aspects, Fairphone scored on industry standard level and five criteria were not sufficiently addressed by Fairphone.

The picture emerging from this review shows that the majority of the selected sustainability criteria are addressed by Fairphone beyond the industry standard, which makes Fairphone a more sustainable choice than the average smartphone on the market.

Criteria that are not sufficiently addressed

- The aspects not sufficiently addressed by Fairphone include:
- The improvement of recyclability through the design
 - The promotion of responsible use of chemicals during production (no use of benzene or n-hexane in all tiers of supply chain)
 - No mention of an environmental management system
 - No effective grievance mechanisms at the factory level
 - No mention of responsible taxation.

⁹⁴ See <<http://www.fairphone.com/wp-content/uploads/2013/12/Fairphone-Made-with-Care-Social-Assessment-Program.pdf>>

⁹⁵ Audit report by TAOS, p. 12, <<http://www.fairphone.com/wp-content/uploads/2015/04/Fairphone-Hi-P-Social-Assessment-Program.pdf>>

⁹⁶ In an e-mail dated 23 April, 2015, Fairphone explains that the representatives of the Workers Welfare Fund (which deals with working conditions) also function as an internal grievance mechanism.

One of the above aspects is not clearly addressed in the public domain; the environmental management system. It is not clear if the Life Cycle Assessment (LCA), which was recently conducted by Fairphone, can and is replacing the environmental management system.

Concluding remarks

Fairphone has scored better than TCO Development. Fairphone scored particularly well on responsible mining, including conflict minerals, and reducing environmental and social impacts. They also scored well regarding e-waste, the Code of Conduct, multi-stakeholder approach, supply chain approach and transparency. Highlights regarding transparency concern the publication of the supplier list, the price structure of the phone, the audit reports and improvement plans.

Some aspects require the attention of Fairphone. For example, interventions by Fairphone are desirable concerning the promotion of the responsible use of chemicals during production. Hazardous chemicals are still often only related to harming the environment but the harm being done to the workers in the production line is still underexposed and is not sufficiently addressed by the industry. (For example, see the Samsung case where many workers have leukemia and other cancers related to the workplace and the benzene and n-hexane poisonings in China.)

Another aspect that requires the attention of Fairphone is the presence of effective grievance mechanisms at the factory level. Genuine grievance mechanisms are considered to have the potential to address violations and improve working conditions. This forms one of the pillars of the framework of the UN Guiding Principles.

Steps on responsible taxation are also desirable. This concerns the payment of all tax liabilities in the country where corporate activities are being carried out and profits are actually being made; no transfer (mis)pricing, no tax evasion and transparency concerning economic activities, profits and payments to governments.

The Comparison

Table 3: Comparison of TCO Development with Fairphone

	Sustainability aspects	TCO score	Fairphone score
1	Design: Energy use	Yellow	Yellow
2	Use of recycled materials in the smartphone (metals and plastics)	Yellow	Green
3	Phasing out of hazardous chemicals (PVC, BFR, beryllium, antimony and phthalates)	Green	Yellow
4	Smart charging systems	Red	Yellow
5	Improvement of recyclability	Green	Red
6	Active policy to increase lifespan: easy repair with easy ordering of spare parts, online repair manuals	Green	Green
7	Active policy to increase lifespan: longer warranty period (>2 yrs)	Yellow	Yellow
8	Replaceable batteries	Green	Green
9	Leadership or participation in responsible sourcing of minerals related to fuelling conflicts (tin, coltan/tantalum, tungsten, gold)	Red	Green
10	Leadership or participation in sustainable mining initiatives of other minerals to reduce environmental and social impact on miners and communities, and/or to reduce child labour and hazardous work	Red	Green
11	Leadership or participation in tracing minerals projects, i.e. publishing identified smelters in its supply chain	Red	Green
12	Production: Implementation of CoC	Green	Yellow
13	Health and safety measures	Yellow	Yellow
14	Responsible use of chemicals in production (no use of benzene or n-hexane, in all tiers of supply chain)	Red	Red
15	Worker training on workers' rights and CoC	Red	Green
16	Leadership or participation in initiatives on the establishment of democratic workers' representations such as unions, workers' councils, and/or improvement of worker-management communication	Red	Green

17	Leadership or participation in initiatives to improve working conditions (such as a living wage project or establishment of workers' funds)	Yellow	Green
18	Leadership or participation in initiatives of fair purchasing practices by the brand	Red	Green
19	Environmentally – Reduction of the amount of energy and water used to produce a phone (footprint)	Red	Yellow
20	Reduction of carbon dioxide and other polluting emissions (footprint)	Red	Green
21	No use of unsustainable materials in packaging	Yellow	Yellow
22	Programme for reduction (of waste) of packaging and printed materials	Green	Green
23	Use of recycled materials for packaging	Red	Green
24	Environmental management system	Yellow	Red
25	Transport	Red	Yellow
26	E-waste and recycling	Yellow	Green
27	Take-back system for recycling	Green	Green
28	Normative framework	Yellow	Green
29	Multi-stakeholder approach	Red	Green
30	Supply chain approach	Yellow	Green
31	Independent verification	Yellow	Green
32	Transparency and (annual) reporting	Red	Green
33	Grievance mechanism	Red	Red
34	Responsible taxation	Red	Red

3.7. Outcomes of the comparison

Fairphone has scored better than TCO Development. The majority of the selected criteria are addressed by Fairphone beyond industry standards: 20 out of 34 criteria, while TCO development scored 7 out of 34.

Scores	TCO	Fairphone
Red	16	5
Yellow	11	9
Green	7	20

Shared red scores

They both score red in relation to the responsible use of chemicals in production. Would Samsung's Galaxy 4S still be approved for TCO Certification if this issue was included in their sustainability criteria? This issue is one of the most important omissions identified by both.

They also both score red in terms of grievance mechanisms and responsible taxation. These topics are rather new in the field of CSR but are high on the CSR agenda of civil society organisations.

Shared green scores

They both score as frontrunners regarding to the following aspects: take-back system for recycling; programme for reduction (of waste) of packaging and printed materials; replaceable batteries; and active policy to increase lifespan (easy repair with easy ordering of spare parts, and through online repair manuals).

4. Recommendations

A socially conscious consumer will expect from a certification body or smartphone producer who claims to offer a 'fair' smartphone that the social criteria are set on the highest level.

To raise the bar to a higher level it is recommended, for both Fairphone and TCO Development, that they include the establishment of effective grievance mechanisms at the factory level in their methodology (being interventions or mandates) as well as including responsible taxation measures.

Also both need to take steps and develop criteria related to responsible use of chemicals during production. This includes:

- ❑ Providing full materials disclosure to workers, communities and the general public, including what chemicals are being used and discharged (the right-to-know about chemical hazards).
- ❑ Assess hazardous materials used in manufacturing throughout the product lifecycle and replace them with safer alternatives.
- ❑ Comprehensive hazard monitoring for all workplaces and workers throughout the product lifecycle.
- ❑ The development of effective worker health and safety committees and training programmes.
- ❑ Compensate and remediate harm to people and the environment.

For TCO Development

The outcome that TCO Development does not take a front runner position on social criteria makes the claim to offer a 'fair' smartphone unsubstantiated. If TCO Development really wants to lead the drive toward a more sustainable approach, and a 'fairer' smartphone, they should include social requirements that go beyond legislation or industry standards.

Two other points for improvement:

- ❑ The reliance on the self-regulation tools of the industry is a weakness in the methodology of TCO Development. The involvement of trade unions and NGOs in the verification processes would be an important improvement.
- ❑ TCO Development should also consider enhancing their supply chain approach: include the mining phase, the smelters and include second-, third- and fourth-tier suppliers in the methodology.

Annex 1: The format of the assessment

The following table includes all sustainability aspects on the basis of which the assessment of TCO Certified and Fairphone took place.

Phases		Sustainability aspects
Design		<p>A sustainable design can include special features to improve its performance related to:</p> <ul style="list-style-type: none"> - Energy use - Use of recycled materials (metals and plastics) - Improvement of longevity and reparability - Phasing out hazardous chemicals (PVC, BFR, beryllium, antimony and phthalates) - Smart charging systems - Improvement of recyclability - Increase lifespan through easy repair - Increase lifespan through longer warranty periods - Replaceable batteries
Production/ life cycle phases of smartphones	Mining	<ul style="list-style-type: none"> - Leadership or participation in responsible sourcing of minerals related to fuelling conflicts (tin, coltan/tantalum, tungsten, gold) - Leadership or participation in sustainable mining initiatives of other minerals to reduce environmental and social impact on miners and communities, and/or to reduce child labour and hazardous work - Leadership or participation in tracing minerals projects, i.e. publishing identified smelters in its supply chain
	Production	<p>Socially responsible manufacturing including efforts related to:</p> <ul style="list-style-type: none"> - Implementation of Code of Conduct for manufacturing - Health and safety measures - Responsible use of chemicals in production (no benzene or n-hexane, in all tiers of supply chain) - Worker training on workers' rights and CoC - Leadership or participation in initiatives on the establishment of democratic workers' representations such as unions, workers' councils, and/or improvement of worker-management communication - Leadership or participation in initiatives to improve working conditions (such as a living wage project or establishment of workers' funds) - Leadership or participation in initiatives of fair purchasing practices by the brand <p>Environmentally sustainable efforts during production including:</p> <ul style="list-style-type: none"> - Reduction of the amount of energy and water used to produce a phone (footprint) - Reduction of carbon dioxide and other polluting emissions (footprint) - Reduction of packaging and printed materials, no use of unsustainable materials and use of recycled materials for packaging - Having an environmental management system: ISO 14000 certification or EMAS registration⁹⁷

⁹⁷ The EU Eco-Management and Audit Scheme (EMAS) is a management instrument developed by the European

	Transport	The distance travelled and mode of transport for the components used in the phone from the production site to the assembly plant. The transport of the phone to the distribution hub and stores/buyers
	E-waste and recycling	<ul style="list-style-type: none"> - Leadership or participation in e-waste initiatives - Leadership or participation in recycling initiatives - Take-back system for recycling with recycling rate higher than 5% the annual products sold
Company performance	Normative framework	Relevant norms to refer to include: the OECD Guidelines, the UN Guiding Principles on Business and Human Rights, ISO 26000, SA 8000, ETI Base Code, the FLA Code. Norms should at least include the ILO Conventions covering eight basic labour rights ⁹⁸
	Multi-stakeholder approach	This can relate to a membership of an MSI, including independent NGOs or labor unions, that collectively aims to improve labour conditions and/or carry out independent audits
	Supply chain approach	A company should do everything in its power to enable, promote and carry out CSR across the entire chain <ul style="list-style-type: none"> - No limitations to the first tier of suppliers but include second, third and fourth-tier suppliers as well, from extractives to e-waste - Companies should be transparent about their suppliers and production locations (supplier list)
	Independent verification	Independent verification should be carried out by an organisation that can form an independent judgement and has the confidence of all relevant stakeholders <ul style="list-style-type: none"> - Audit results are made available for all stakeholders, the employees, the union and NGOs to test the CSR policy against reality
	Transparency and reporting	Transparency and (annual) reporting on CSR performance, such as: <ul style="list-style-type: none"> - environmental targets - labour conditions/code compliance/corrective action plans
	Grievance mechanisms	Companies should provide access to remedies for individuals, workers and/or communities that may be impacted by their activities by establishing a grievance mechanism to handle complaints ⁹⁹ <ul style="list-style-type: none"> - Availability of a formal way to file a complaint at a company level (hotlines, complaint boxes, email addresses)
	Responsible taxation	This concerns the payment of all tax liabilities in the country where corporate activities are being carried out and profits are actually being made; no transfer (mis)pricing, no tax evasion and transparency concerning economic activities, profits and payments to governments

Commission for companies and other organisations to evaluate, report and improve their environmental performance. The ISO 14000 standard addresses various aspects of environmental management. It provides practical tools for companies and organisations looking to identify and control their environmental impact and constantly improve their environmental performance.

⁹⁸ Freedom of association and the right to collective bargaining (ILO Conventions 87 and 98, supplemented by 135); prohibition of forced labour (ILO Conventions 29 and 105); prohibition of child labour (ILO Conventions 138 and 182); prohibition of discrimination (ILO Conventions 100 and 111); the right to job security (ILO Tripartite Basic Principle, art. 24-28); the right to a safe and healthy work environment (ILO Convention 155); compliance with maximum hours of work (ILO Convention 1); the right to a living wage (ILO Tripartite Basic Principle, art. 34).

⁹⁹ The UN Guiding Principles state that companies have a responsibility to protect human rights. As part of this obligation a grievance mechanism (GM) should be established. In accordance with Principle 31 of the UN Guiding Principles, GMs should be legitimate, accessible, predictable, equitable, transparent, rights-compatible, a source of continuous learning and based on engagement and dialogue. See: "Using Grievance Mechanisms", SOMO, March 2014 <<http://www.somo.nl/news-en/grievance-mechanisms-fail-to-give-workers-access-to-remedy>>, (6 January 2015).

Annex 2: Comparison of the normative frameworks.

	Fairphone (ETI Code)	TCO Certified (eight ILO core conventions; UN Convention on the Rights of the Child, Article 32; The health and safety legislation in force in the country of manufacture; The labour law, including rules on minimum wage and the social security protection in the manufacturing country)
Norms should at least include the eight ILO fundamental Conventions, plus ILO Convention 155 stipulating the right to a safe working place, ILO Convention 1 stipulating maximum working week of 48 hours (then it is regarded as industry standard)		
Beyond industry standard: inclusion of right to living wage, the right to job security		
Freedom of Association and Protection of the Right to Organise Convention, 1948	87	87
Right to Organise and Collective Bargaining Convention, 1949	98	98
Forced Labour Convention, 1930	29	29
Abolition of Forced Labour Convention, 1957	105	105
Minimum Age Convention, 1973	138	138
Worst Forms of Child Labour Convention, 1999	182	182
Equal Remuneration Convention, 1951	100	100
Discrimination (Employment and Occupation) Convention, 1958	111	111
The right to a safe and healthy work environment (ILO Convention 155)	155. Working conditions are safe and hygienic	
Compliance with maximum hours of work (ILO Convention 1) 48 p.w.	Working hours shall not exceed 48 hours per week	
The right to job security (ILO Tripartite Basic Principle, art. 24-28)	Regular employment is provided	
The right to a living wage (ILO Tripartite Basic Principle, art. 34)	Living wages are paid	
Humane treatment	No harsh or inhumane treatment is allowed	