ATEA SUSTAINABILITY FOCUS

Report to Responsible Business Alliance
JANUARY 2019

Circular economy

The foundation of a sustainable IT industry

Summary

This report presents recommendations to the Responsible Business Alliance (RBA) and its member companies on how to advance circular economy in the IT industry, considered by Nordic IT buyers to be the most pressing sustainability aspect for the industry to address.

Atea Sustainability Focus (ASF) is an initiative that on a yearly basis provides the RBA with business intelligence on the expectations from the Nordic market on the sustainability work of the industry. The ambition is to use the collective voice of the Nordic IT buyers to influence the industry towards more sustainable operations. With input from a stakeholder dialogue with 258 professionals within IT, sustainability and procurement, and an industry analysis conducted by the sustainability consultancy firm Ethos International, the ASF Advisory Board developed the following recommendations to the RBA and its member companies.

The recommendations from the Board:

Develop and implement a 2050 climate-neutral and competitive Business Roadmap for the transition into a circular economy

Key activities include:

- Initiate the development of a certifiable ISO standard on circularity for the IT industry
- Establish principles for including circular economy provisions in the Code of Conduct and audit protocols
- Establish a task force on circularity focused on influencing international rules and regulations and sustainability labels towards circularity
- Facilitate roundtable discussions on circular economy design and marketing
- Launch academy trainings on circular design
- Facilitate stakeholder dialogues regarding the standardization of components and materials – "One cord only"

The members of the ASF Advisory Board crafted and formulated the recommendations during a two-day workshop in November of 2018. The workshop included full background briefings of sustainability, the sustainability areas and the industry analysis. The group held vivid and intense discussions that covered a wide range of perceptions, insights and assessments before landing in the final recommendations that are handed over to the RBA.

The ASF process

Stakeholder dialogue
Nordic IT buyers identify key sustainability aspects through an online survey and offline dialogues.

Industry analysis
Sustainability experts conduct an industry analysis of the top three areas selected.

Recommendations
The ASF Advisory Board, comprised of leading IT and sustainability professionals from Nordic companies, municipalities and organizations, selects a focus area and formulates concrete recommendations.

Handover to the industry
RBA and its member companies decide on specific activities to implement the recommendations from the ASF Advisory Board.

Table of Contents

1 Background and purpose

Buyers' requirements are one of the most powerful drivers for improved sustainability performance. They provide an unambiguous, concrete and immediate business case for investing in sustainability.

What happens when this powerful process starts at the very top of the value chain?

The last five years have seen an exponential increase in end-buyers' interest in sustainability. This is most evident within B2B, where sustainability demands on indirect spend (goods and services that help run the organizations) are now routinely placed by both public procurers and buyers in private organizations.

The global IT industry considers the Nordic buyers to be the most progressive and ambitious in their sustainability requirements. Increased awareness of risks and negative impacts associated with the complex value chain of IT solutions, a new European regulatory landscape for public procurement and an advancement of sustainability practices among public and private buyers alike, are key contributing factors.

At the very top of the value chain, engaged end-buyers can have a tremendous impact on the industry, influencing and stretching its common standards and practices, and creating clear market incentives for improvement.
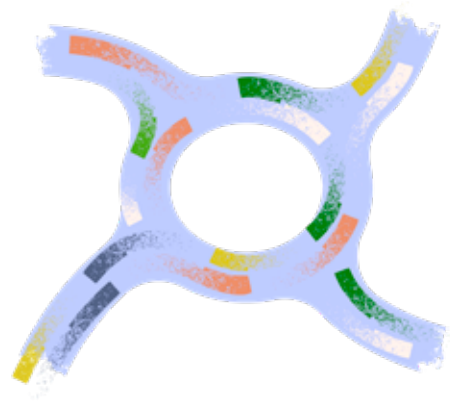
Could these insights be used to spur an acceleration of sustainability efforts within the IT industry?

IT infrastructure provider Atea has a unique position. As market leader with established local presence and trust in all Nordic countries, as well as long-lasting strong partnerships with leading brands, Atea plays a role as the industry's ear to the market and the customers' voice towards the industry. In 2016, Atea joined the Responsible Business Alliance (RBA), the coalition that leads sustainability efforts within the IT industry.

RBA was founded in 2004 by a small group of electronics companies seeking to create an industry-wide standard on social, environmental and ethical issues in the industry value chain. Today, the RBA has more than 140 members sharing a common code, assurance systems and capacity building practices to have a positive impact on six million direct employees and thousands of suppliers.

Taking responsibility for its size and position, Atea launched Atea Sustainability Focus (ASF) as a platform for IT buyers to crystallize what sustainability efforts they want to see from the IT industry and why. ASF consolidates buyers' demands into the single most urgent priority for the IT industry to address – through the RBA. Concrete recommendations to advance the single priority are put forward by a board of sustainability and digitization leaders, called the ASF Advisory Board.

The annual focus accelerates progress by harnessing the industry efforts in the most urgent direction. The recommendations balance out customers' ambition and industry possibilities, creating effective change. The 2019 report provides key insights into the process, the focus area and the annual recommendations, and summarizes the results of the first year of ASF. The Nordic buyers have welcomed the initiative with impressive engagement and the RBA embraced the report, initiating a process to address its recommendations.

Stakeholder
dialogue

Repeat

Sustainability
areas

Follow up

Industry
analysis

The ASF process

Implementation

Insights

RBA

ASF
Advisory
Board

Recommendations

The recommendations from the ASF Advisory Board is not to be seen as replacing or overruling any
existing initiatives or work already in place between the RBA and members of the ASF Advisory Board.

2 Follow up on the ASF report 2018

Key take-aways from the previous report

The recommendations from the ASF Advisory Board to the RBA in the ASF report of 2018 can be summarized as follows:

• The RBA should over the short/medium period focus on transparency beyond the first tier
• The RBA should focus on establishing and implementing a uniform reporting framework for the electronics industry; covering environmental, social and governmental impact across material indicators and measurable performance over the full value chain
• The material indicators must be reported on by all member companies of the RBA
• All RBA regular and full members must include a mandatory and complete list of suppliers

The Advisory Board's comments on the implementation of the 2018 recommendations

The ASF Advisory Board recognizes that the RBA has initiated the implementation of the 2018 recommendations. It is acknowledged that the proposed changes are matters that require adequate time to implement in a serious and proper manner. The work with GRI (Global Reporting Initiative) is appreciated. The cooperation aims to provide standardized reporting guidelines relating the outcomes of two of RBA's flagship initiatives: Responsible Minerals Initiative (RMI) and Responsible Labor Initiative (RLI). These are measures that in the near future would greatly increase transparency in the value chain and should be further prioritized due to the positive impact that lies in the initiatives. Overall, the ASF Advisory Board is pleased with the accomplishments and look forward to following the progress. See response from the RBA on next page.

"Overall, the ASF Advisory Board is pleased with the accomplishments and look forward to following the progress."

Letter from the Responsible Business Alliance

In November of 2018, Rob Lederer, Executive director of the RBA, sent a formal response to the members of the Advisory Board, presenting how the RBA has addressed the recommendations of the 2018 report:

"It has been nearly a year since we received the sustainability report from the ASF board. Annually we hold an executive, invitation-only, meeting that includes some of the most well-known brands in the world. This meeting is called the Leadership Circle, lasts for two days, and is held in the Washington, D.C. area. This forward-looking meeting looks to align multiple industries on emerging issues and identify future trends in which the RBA should engage.

We invited Atea to present the ASF Report last May at the Leadership Circle. The findings from the report were similar to the past two years of Leadership Circle feedback, which included an underlying theme of increasing transparency. In 2017, at the Leadership Circle, we showed how our work is aligned with the sustainable development goals (SDG). In 2018, furthering the concept of transparency is required to implement many of those goals.

The reaction from members and stakeholders has been positive. Many members and their customers agree that transparency is one of the most important, broad-sweeping improvements that can be made to support corporate social responsibility globally. There are three areas where we see the recommendations of the ASF meeting in the collective work of the RBA:

- *Our partnership with the Global Reporting Initiative (GRI) to develop resources to promote transparency in responsible minerals sourcing and modern slavery due diligence.*
- *Our 2020 Roadmap.*
- *Our work on data mining our robust online data regarding audits, risk assessments, etc.*

We are pleased to see the recommendations from the ASF board align with recommendations from our members and other stakeholders. You can be confident that transparency is top of mind within the RBA membership and it is being integrated into the work that we do at all levels. We see the value in the collective recommendations of an industry, such as the ASF board, and we encourage you to continue to filter your recommendations to us."

Best regards,

Rob Lederer

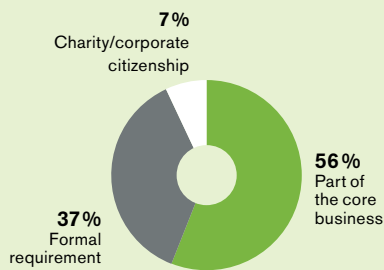*Executive Director, Responsible Business Alliance.*

3 Stakeholder dialogue

Through an online survey, 258 respondents prioritized urgent sustainability areas within three overarching categories: Social Responsibility, Environment, and Ethics and Finance. The respondents then chose one single aspect which resulted the following top areas:

1. Circular thinking across the value chain (Circular economy)
2. Transparency towards stakeholders
3. CO_2 emissions throughout the whole product life cycle (GHG emissions)
3. Ensure respect for international core working conventions (ILO8)

About the respondents

The role of sustainability in the organization

7% Charity/corporate citizenship

56% Part of the core business

37% Formal requirement

Job role

9% Other

18% Sustainability

66% IT

7% Procurement

Sector

53% Public

47% Private
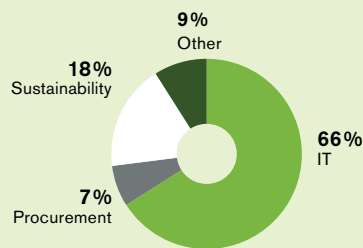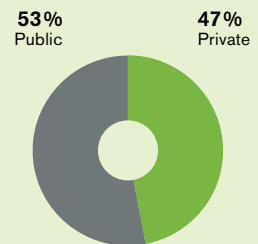
The respondents' views on how the IT industry is treating sustainability issues

20% Fairly or very important

35% Not or little important

45% Moderately important
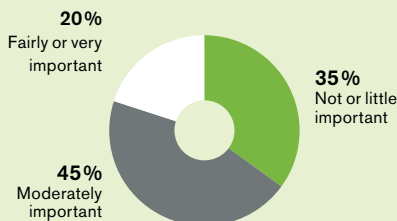
Size of the organization

Number of respondents

| | 0–9 | 10–49 | 50–249 | 250–499 | 500 + |
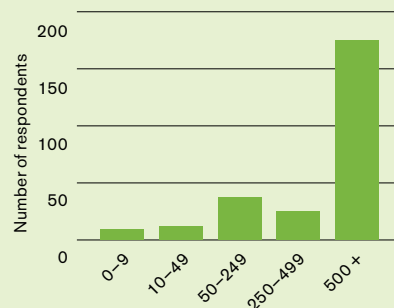
4 Recommendations to the Responsible Business Alliance

The two-day Advisory Board meeting offered engaged and concerted discussions. The three sustainability areas resonated with all the members who took on the selection of this year's focus with great respect for the complexity of the subject matter. Through discussions in smaller groups, the Advisory Board concluded their findings. Each sustainability area was assessed by urgency, potential for industry collaboration, business potential and stakeholder priority. The representatives had different opinions on the priority of the various areas and discussed them thoroughly. However, at the end circular economy was selected as this year's focus area with unanimity, as it was perceived to enable substantial progress on the other areas: GHG emissions and worker's rights (ILO8). The Advisory Board brainstormed a long list of recommendations that was prioritized based on two parameters, effect and effort.

Circular economy
Circular economy is about extending product lifespan, increasing opportunities for reuse and refurbishment of products and materials, and paying attention to design to maximize resource efficiency, minimize waste and the need for extracting virgin materials.
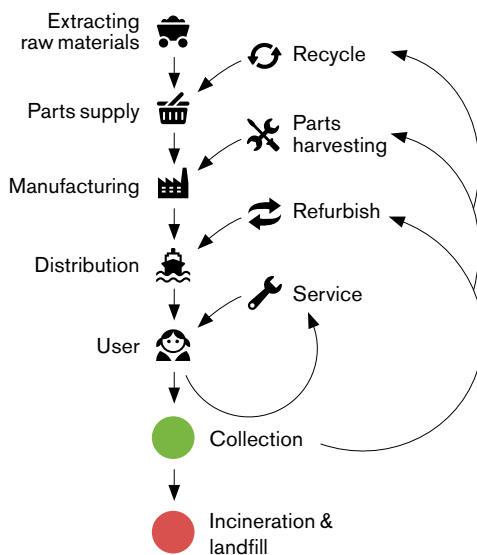
Advisory Board Statement

The move towards a circular economy is a fundamental part of sustainability for the IT industry as a whole. The Board believes that brands have the most impact in the design phase since resource efficiency and level of reparability must be included in the original construction and drawing. The Board recognizes the critical role the Responsible Business Alliance and its member companies have in shaping the IT industry's transformation from a linear business model to a circular one. Therefore, the primary recommendation to the RBA is to develop a 2050 industry-wide, climate-neutral and competitive Business Roadmap for the transition into a circular economy. The majority of the recommendations are activities that support and enable the fulfilment of this roadmap.

The recommendations can be divided into three main group of activities: (1) the 2050 Business Roadmap, (2) undertakings with a higher threshold that the RBA should adopt with a long-term perspective, and (3) activities that can be applied immediately.

1. **Overarching recommendation: A 2050 industry-wide, climate-neutral and competitive Business Roadmap for the transition into a circular economy**
   - Align the 2050 Roadmap with the Paris agreement and the circular economy model developed by the Ellen MacArthur Foundation (2017).
   - Require science-based targets[1] including Scope 3

---

[1] If a company's GHG reduction targets are in line with the level of decarbonization required to limit global warming to well below 2 degrees Celsius, they are considered science-based (Science-based targets, n.d.).

2. Activities with a long-term perspective

    a) Initiate the development of a certifiable ISO standard on circularity for the IT industry

    b) Establish principles for including circular economy provisions in the Code of Conduct and audit protocols

3. Activities that could be implemented in the short term

    c) Establish a circular thinking task force, with the following tasks:
- Lobby for government policies to be aligned in regard to the interpretation of the Basel convention, so that IT products can be transported out of countries and get an increased lifespan, or to enable easier recycling
- Lobby for government policy to make secondary materials more financially viable to use and, by consequence, make primary materials more expensive to use
- Influence existing labelling systems to enable users to make informed decisions when selecting products. Make sure to include:
    - i. Lifespan expectancy
    - ii. Climate footprint
    - iii. The approximate reparation cost and level of reparability
- Lobby for government directives on standardized components, accessories and materials

    d) Facilitate two roundtables to develop circular products and services. The topics of the roundtables should be:

- (1) A new design paradigm. For product developers and sustainability experts, address product development for minimalistic and circular design. Use a cross-disciplinary education platform for knowledge exchange, best practices and idea generation.
- (2) Circular marketing. For marketing experts of the industry, develop marketing strategies to make reuse and admission of imperfections the new cool in order to change consumer behavior.

    e) Include circular economy in the RBA Compass Awards[2] and establish a ranking system to recognize the best performers as a further development of the existing prize.

    f) Launch an academy-training program on circular design that addresses:
- Reparability and cost of repairing
- Durability
- Reusability
- Upgradability
- Sustainable materials

    g) Facilitate a stakeholder dialogue on responsible design themed "One cord only" to decide upon standardized components and materials.

---

[2] An award program launched by the RBA that recognizes corporate social responsibility excellence across three categories: leadership, innovation and implementation (RBA, 2019).

ASF Board members

Björn Sigurdson, Uppsala Municipality
Catarina Paulson, Alfa Laval
Erik Nilsson, H&M
Kajsa Nylander, Systembolaget
Maria Færgemann, Nordea
Maria Greve, Nordea
Peter Nohrstedt, SKL Kommentus
Ulf Linderoth, Malmö Municipality
Åsa-Pia Folkesdotter, Ikea

5 Industry analysis

The industry analysis focuses on circular economy. For a more in-depth analysis of the two other sustainability areas, GHG emissions and workers' rights, see Appendix II and III.
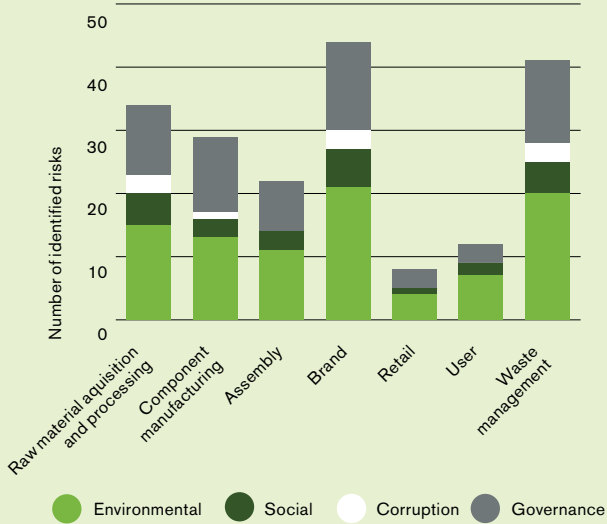

Circular economy

Risks and opportunities

Circular economy is a concept that seeks to maximize resource efficiency by minimizing waste and the need to extract virgin materials. This is done by expanding a product's lifespan and increasing the reuse and refurbishment of products and its materials. Several potential measures for the IT industry to move towards a circular economy model have been identified together with their associated risks and opportunities, see Appendix III for example of measures. The risks and opportunities were assessed from two different perspectives, sustainability and corporate (Table 1).

Table 1.
Risk and opportunity categories

Sustainability categories	Corporate categories
Environmental	Legal
Social	Reputational
Corruption	Financial
Governance	Operational

While most risks and opportunities can be found with brands and waste management operators, quite many are also found upstream in the value chain, see Figure 1–4. For the sustainability categories, a majority of the risks and opportunities identified are classified as environmental and governance related. For the corporate categories, the risks and opportunities are mainly reputational and operational. The least amount of risks and opportunities have been identified for retailers and users.

Figure 1.
Sustainability risks in the
IT industry's value chain

Number of identified risks

50 — 40 — 30 — 20 — 10 — 0

Raw material aquisition and processing
Component manufacturing
Assembly
Brand
Retail
User
Waste management

● Environmental ● Social ○ Corruption ● Governance

Figure 2.
Sustainability opportunities
in the IT industry's value chain

Number of identified opportunities

50 — 40 — 30 — 20 — 10 — 0

Raw material aquisition and processing
Component manufacturing
Assembly
Brand
Retail
User
Waste management

● Environmental ● Social ○ Corruption ● Governance
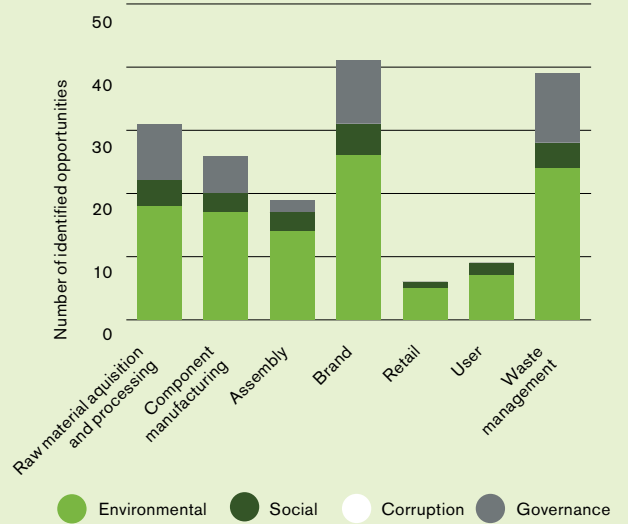
Figure 3.
Corporate risks in the
IT industry's value chain

Number of identified risks

50 — 40 — 30 — 20 — 10 — 0

Raw material aquisition and processing
Component manufacturing
Assembly
Brand
Retail
User
Waste management

● Financial ● Legal ○ Reputational ● Operational
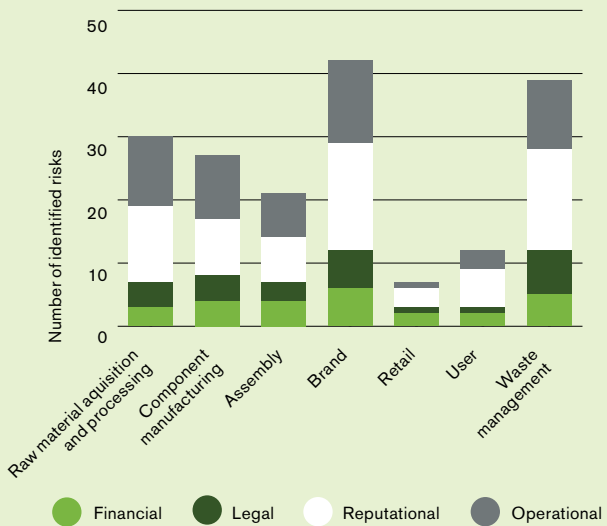
Figure 4.
Corporate opportunities in the
IT industry's value chain

Number of identified opportunities

40 — 30 — 20 — 10 — 0

Raw material aquisition and processing
Component manufacturing
Assembly
Brand
Retail
User
Waste management

● Financial ● Legal ○ Reputational ● Operational
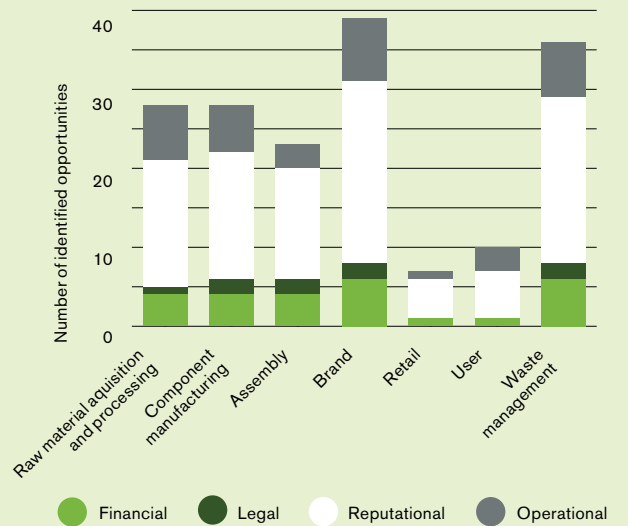
Potential

The potential of circular economy is assessed by adding two dimensions to the analysis: Maturity and Changeability[3]. Maturity refers to the system and its current state in the transformation of each area. Changeability refers to how easily the current system is transformed (see Appendix I for exact definitions). Table 1 shows an overview of the business potential for the three sustainability areas that has been determined in the industry analysis.

Table 1. The business potential for the brands regarding the sustainability areas

| Area	Potential	Maturity	Change-ability	Brand impact
Circular Economy	*Extensive*	Rocketing	Expected	High
GHG Emissions	*Considerable*	Prevailing	Natural	Low
Worker's rights	*Intermediate*	Prevailing	Plausible	Medium

Circular economy is viewed to hold Extensive potential (Table 1) for the brands as it is progressively included in policies and increasingly becoming the foundation of new business models. Moreover, stakeholders' expectations on companies to adapt current governance systems towards a circular economic model are rising. Hence, the Maturity of circular economy is defined as Rocketing. Stakeholder expectations along with regulatory efforts, such as the Circular Economy Action Plan developed by the European Commission (2015), are strong drivers for change. Therefore, the Changeability of circular economy is determined to be Expected. The brand impact is defined as High since most of the risks and opportunities, as mentioned in the analysis above, are within the brands' own operations (see Figure 1 to Figure 4).

[3] For an overview of the potential for the three sustainability areas, see Table 6 in Appendix II that is available in the digital version.

Greenhouse gas (GHG) emissions

This area has Considerable potential, see Table 1. The Maturity is determined to be Prevailing considering the many efforts and large resources spent on addressing climate change. For the same reason, and since reduction of GHG emissions can be considered a hygiene factor for business, Changeability is determined to be Natural. However, a majority of the IT industry emissions is emitted in Scope 3[4], mainly through the use of IT equipment and fossil energy[5]. Apart from designing more energy-efficient products with prolonged lifecycles, the complexity of the IT industry's value chain and the fact that the brands have a small impact outside their own operations[6] make it difficult for brands to decrease emissions in Scope 3. The transition to low-carbon energy is also mainly on a governmental level[7]. Hence, brand impact is determined to be Low for the area of GHG emissions.

Figure 5. GHG emissions and brand impact in the value chain
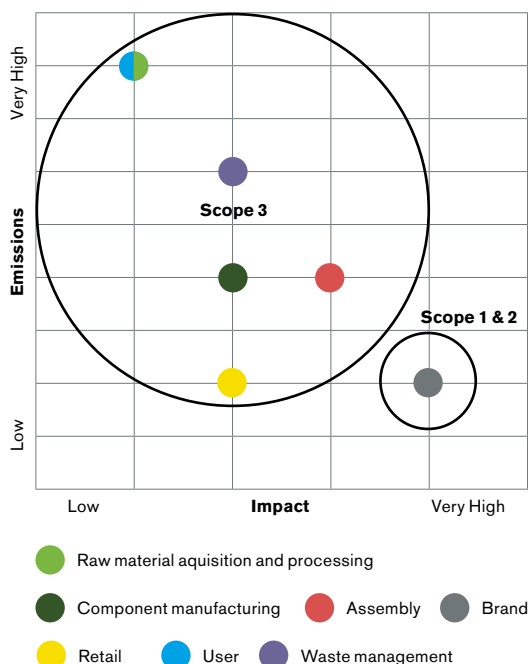
Figure 6. Impact due to non-compliance of ILO8 in the value chain
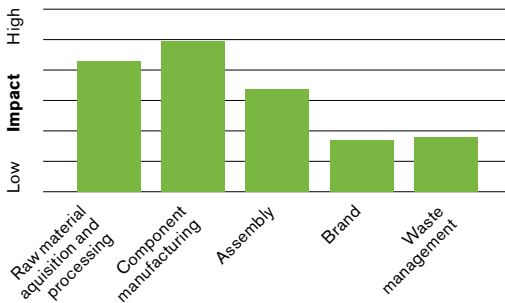
Workers' rights

Workers' rights have Intermediate potential, see Table 1. For the past century, we have seen a strong, organized movement for improved workers' rights, but the speed of change has decelerated on a global level. There are several political and financial situations that counteract the implementation of full workers' rights as stated in ILO8 (Freedom of association, Collective bargaining and Right to strike). For example: national minimum wages, the establishment of special economic zones (such as free-trade zones) and party-political or religious interference and/or backing of unions. The Maturity of workers' rights is therefore determined to be Prevailing. The degree of advancement that can be achieved is estimated to be limited, as a large majority of the 187 ILO member countries have ratified the two ILO8 conventions, No. 87 and No. 98[8], but full enforcement is of varied degree, due to international trade in correlation with political and social reasons. Hence, Changeability is determined to be Plausible. The brand impact is set to Medium, because a majority of the impacts due to non-compliances with ILO8 occurs upstream the value chain, as can be seen in Figure 6.

[4] L Neves, personal communication, November 5th 2018.
[5] D Stickler, personal communication, November 5th 2018.
[6] L Neves, personal communication, November 5th 2018.
[7] D Stickler, personal communication, November 5th 2018.
[8] 83% of the ILO members countries has ratified Convention No. 87, Freedom of association and Protection of the right to Organise, 1948 (ILO, 2017a). 88% of the ILO members countries has ratified Convention No. 98. Right to Organize and Collective Bargaining Convention, 1949 (ILO, 2017b).

Conclusion

For the second year in a row, more than 250 Nordic organizations set the agenda for the IT industry through the initiative Atea Sustainability Focus. Their voices have been condensed in this report, where the Advisory Board through analysis and discussions identified Circular Economy as the most pressing issue for the industry to address.

Primarily, the Board recommends the RBA and its member companies to develop a 2050 climate-neutral and competitive Business Roadmap for the transition into a circular economy.

This report also summarises the progress that has been made on transparency, subject of the first ASF report of 2018. This is testament to the fact that buyers' requirements are one of the most powerful drivers of improved sustainability performance, and that speaking with one voice helps the customers make their demands more concrete and the industry to focus their efforts.

Appendix I
Detailed method

This Appendix will go through the methods used for each part of the report in detail. The Stakeholder Dialogue was conducted by the sustainability consultancy firm Enact together with Kantar Sifo, and the Industry analysis has been conducted by the sustainability consultancy firm Ethos International.

Stakeholder dialogue

The list of materiality aspects was identified by a desktop analysis and a dialogue with experts on the current and emerging issues that were not addressed fast enough by the IT industry or that had made limited progress (Enact, 2018). The material aspects were then prioritized by stakeholders through an online survey (Kantar Sifo, 2018). Enact (2018) identified 24 material aspects that were sent out to stakeholders for prioritization with regard to which area the stakeholders thought had the highest urgency for the IT industry to address (Kantar Sifo, 2018). The survey had 258 respondents during June to September 2018 (Kantar Sifo, 2018).

Industry analysis

The basis of the Maturity, Changeability and Brand impact analysis is a risk and opportunity analysis that was made on a more detailed level for each of the sustainability areas, the analysis can be seen in Appendix II-III. Table 2 and Table 3 show the exact definitions used for Maturity and Changeability respectively. Table 4 shows the definition used for each of the sustainability aspects for the industry analysis together with the method used for risk and opportunity identification. It should be noted that the sustainability aspects have been more focused or broadened going from the stakeholder dialogue to the industry analysis to enable a more fruitful analysis. Further, an important viewpoint throughout the report is the value chain perspective, which has been incorporated into the analysis of all of the three focus areas. The parts of the value chain are defined in Table 5.

Table 2. The scale for Maturity

Stage	Definition	Score
Established	The new system is the established norm.	1
Prevailing	Every stakeholder is part of and working with the transformation of the system.	2
Rocketing	The components of the new system are included in policies and new business models.	3
Initiated	Initiatives are commenced.	2
Emerging	People are talking about it and some pioneering research has been conducted.	1

Table 3. The scale for Changeability

Stage	Definition	Score
Momentum	The transformation is happening by itself.	5
Natural	The transformation is expected but also obvious for the stakeholders.	4
Expected	There is legislation regarding the transformation.	3
Plausible	It is public opinion that transformation is plausible.	2
Impossible	It is public opinion that transformation cannot happen.	1

Table 4. Sustainability area – definitions and methods for risk and opportunity identification

Sustainability Area	Definition	Method
Circular economy	Circular economy is an industrial model which aims to redefine growth by decoupling economic activity from the consumption of finite resources and designing out waste from the economic system (Ellen MacArthur Foundation, 2017). It is not focused on reducing the negative impacts from the current linear economy, but to shift the current system into one that builds in resilience, generates opportunities and provides social and environmental benefits (Ellen MacArthur Foundation, 2017).	The topics were determined through a literature review and identification of risks and opportunities for each topic followed by a categorization. The analysis had a brand impact perspective, looking at what lies within the brands' power. The categories for the risks and opportunities can be seen in Table 1, Section 4.
GHG emissions	Emissions of gases that absorb infrared radiation and therefore contribute to the greenhouse effect (GRI, 2018).	Estimating the emissions from each part of the IT industry's value chain. The analysis had a brand impact perspective, looking at what lies within the brands' power.
Worker's rights	This area concerns freedom of associa-tion and collective bargaining (ILO, 2018). Freedom of association is a human right that is proclaimed in the Universal Declaration of Human Rights and one of the founding principles of ILO together with collective bargaining (ILO, 2018).	Identifying which countries that are relevant in the value chain and how the current situation regarding ILO8 is at a country level. The analysis had a brand impact perspective, looking at what lies within the brands' power.

The references used in this analysis are industry reports, lifecycle assessments of IT products, subject matter reports, sustainability reports and interviews with experts. The following experts have been interviewed:
• Marcel Jacobs, Founder of Circl8
• Darrel Stickler, The Global Environmental/Sustainability Lead at Cisco
• Luis Neves, CEO at the Global e-Sustainability Initiative (GeSI)

Recommendations to the Responsible Business Alliance

The process of selection and recommendation development was performed by the ASF Advisory Board that is composed of sustainability experts from Nordic companies, municipalities and organizations.

The Advisory Board discussed the three chosen sustainability areas from the stakeholder dialogue with a basis in the industry analysis and their own expertise. For each sustainability area, Ethos International and Atea urged the Advisory Board to consider the following aspects in their prioritization of the sustainability areas:
• Business value. What are the business benefits for the industry when addressing the issue?
• Urgency. How urgent is the need for the industry to address the issue?
• Stakeholder Priority. How big is the pressure from stakeholders on the issue?

• Industry collaboration potential. How well can the industry collaborate when addressing the issue? What are the benefits?

When the sustainability focus area was selected, the ASF Advisory Board brainstormed recommendations for the RBA to implement the chosen sustainability area in the IT industry. The Advisory Board developed a long list of recommendations that was condensed and refined by Ethos International. Then the Advisory Board gave feedback on the list of recommendations and it was prioritized based on two parameters, effect and effort. This process resulted in nine recommendations divided into three categories: the overarching recommendation, those that should be considered for future adaptation and those that can be implemented in the near future.

The recommendations were developed by the following Advisory Board members:

• Björn Sigurdson, Uppsala Municipality
• Catarina Paulson, Alfa Laval
• Erik Nilsson, H&M
• Kajsa Nylander, Systembolaget
• Maria Færgemann, Nordea
• Maria Greve, Nordea
• Peter Nohrstedt, SKL Kommentus
• Ulf Linderoth, Malmö Municipality
• Åsa-Pia Folkesdotter, Ikea

Table 5. Description of the value chain

Part of value chain	Description
Raw material extraction and processing	Includes all of the extraction of natural resources and the processing of those resources into materials that can be used in manufacturing.
Component manufacturing	Includes the process in which basic materials are manufactured to (more complex) components. Also called Electronics Manufacturing Services (EMS) or Electronics Contract Manufacturing (ECM).
Assembly	The part where all the components are put together into final products. Also called Original Equipment Manufacturer (OEM).
Brand	Where the design process of the products takes place. Both B2B and B2C brands.
Retail	Sells or leases the branded products to the users. Also includes distribution.
Users	The consumers of the brand products.
Waste management	Includes the different ways that waste can be handled: landfills, incineration, reuse and both formal and informal recycling and all other forms of waste management.

Appendix II
Potential, risks and opportunities

Potential – Overview

Table 6 shows an overview of the business potential for the three sustainability areas that has been determined in the industry analysis.

GHG Emissions

Potential

This area has considerable potential, as can be seen in Table 6. The Maturity has been determined to be Prevailing due to the many efforts and large resources spent on addressing climate change. Examples are the research reports done by the IPCC, the Paris Agreement, The Sustainable Development Goals (SDGs), Task force on Climate-related Financial Disclosures (TCFD) and national taxes of emissions. For the same reason, and since reduction of GHG emissions can be considered a hygiene factor for business, Changeability is determined to be Natural. The complexity of the IT industry's value chain and the fact that the brands have a small impact outside their own operations[9] makes it difficult for brands to decrease emissions in Scope 3. Brands could decrease emissions from users by designing more energy-efficient products with prolonged lifecycles but a transition to low-carbon energy is mainly on a governmental level[10]. Hence, the brand impact has been determined to be Low for the area of GHG emissions.

Risks and opportunities

This analysis studies where in the value chain the most emissions are emitted and how much influence the brands have on these emissions in the value chain. The basis of the GHG emissions analysis has been the three scopes as they are defined by the GHG Protocol (2015). The definitions of each scope are:

- Scope 1: Direct emissions from the operations that are owned or controlled by the company
- Scope 2: Indirect emissions from the generation of energy that is purchased by the company
- Scope 3: All indirect emissions both downstream and upstream in the value chain that are not covered in Scope 2

In this report, brands are in Scope 1, their energy suppliers in Scope 2, and all the other value chain actors are placed in Scope 3. In the IT industry, around two times the amount of emissions is emitted in Scope 3 compared to Scope 1 and Scope 2[11], where the users are emitting the most[12]. Figure 7 shows where in the value chain that it is estimated that the most emissions are emitted and where in the value chain the Brands have

---

[9] L Neves 2018, personal communication, November 5th
[10] D Stickler 2018, personal communication, November 5th
[11] L Neves 2018, personal communication, November 5th
[12] L Neves 2018, personal communication, November 5th

Table 6. The business potential for the brands regarding the sustainability areas

Area	Potential	Maturity	Changeability	Brand impact
Circular Economy	*Extensive*	Rocketing	Expected	High
GHG Emissions	*Considerable*	Prevailing	Natural	Low
Worker's rights	*Intermediate*	Prevailing	Plausible	Medium

the most impact. The value chain of the IT industry is very complex, so brands have low influence overall outside their own operations[13]. To complicate it further, they have the least impact where the most GHG are emitted and the most impact where the least GHG are emitted. Collaboration is the key to overcome the challenges since there are no easy measures[14]. Two things that companies in the IT industry could do to reduce GHG emissions are[15]:

• Cut waste. This will increase the efficiency of the production system, saving energy and hence decreasing GHG emissions.
• Reduce resource use. Investigate how resource efficiency can be introduced in the system from the product design phase through to working with suppliers to optimize production at different stages.

The main cause of emissions in the IT industry is the use of fossil generated electricity. The Brands can affect the lifecycle of their products by making them more efficient, but a transition to a low-carbon energy is on a governmental level[16]. Logistics is one part of the value chain that emits the least, together with waste management[17]. Further, a comparison between different industries made by CDP & WWF (2013) shows that the potential for the IT industry to reduce the impact on climate change from the economy is relatively low. The same report shows that other industries, such as materials, transport and consumer discretionary have ten to five times larger reduction potential.
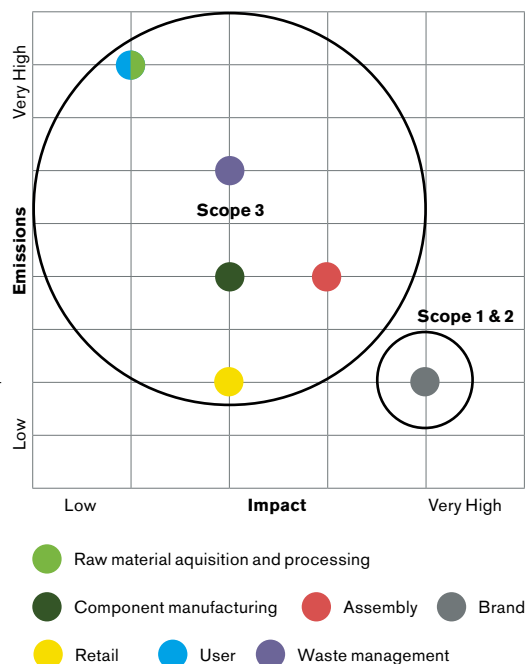
---

[13] D Stickler 2018, personal communication, November 5th.
[14] D Stickler 2018, personal communication, November 5th.
[15] D Stickler 2018, personal communication, November 5th.
[16] D Stickler 2018, personal communication, November 5th.
[17] D Stickler 2018, personal communication, November 5th.

Worker's rights

Potential

Workers' rights have intermediate potential, as can be seen in Table 6. For the past century we have seen a strong, organized movement for improved workers' rights, but the speed of change has decelerated on a global level. There are several political and financial situations that counteract the implementation of full workers' rights as stated in ILO8 (Freedom of association, Collective bargaining and Right to strike). For example: national minimum wages, the establishment of special economic zones (such as free-trade zones) and party-political or religious interference and/or backing of unions. The Maturity of workers' rights has been determined to be Prevailing. The degree of advancement that can be achieved is estimated to be limited, hence the changeability is determined to be Plausible. A large majority of the 187 ILO members countries have ratified the two conventions that ILO8 consists of, No. 87 and No. 98[18], but full enforcement is of varied degree, due to international trade in

Figure 7. GHG emissions and brand impact in the value chain

Raw material aquisition and processing

Component manufacturing   Assembly   Brand

Retail   User   Waste management

correlation with political and social reasons. The brand impact has been set to Medium, because a majority of the impacts due to non-compliances with ILO8 occurs upstream the value chain, as can be seen Figure 8.

Risks and opportunities

This analysis shows the implementation of ILO8 through the relevant countries in the IT industry's value chain. The countries included were identified from social lifecycle assessments of IT products made by Ekener and Finnveden (2013) and Ciroth and Franze (2011). The status of ILO8 in each country was identified through a literature review made by U.S Department of State (2017).
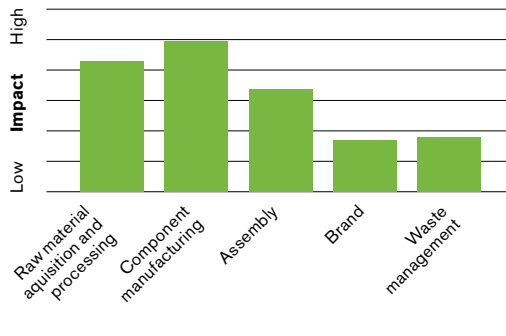
The components of ILO8 included are:
• Freedom of association
• Collective bargaining
• Right to strike
• Anti-union discrimination

The results from the combined information was analyzed from a holistic sustainability perspective. The outcome shows the factual implementation and legal compliance of freedom of association, collective bargaining, strike rights and laws against discrimination of union members, pictured in Figure 8. An analysis of publicly available information relating how the largest brands manage the risks associated to the ILO8 core conventions was undertaken ahead of the board meeting. It was found that the right to collective action is often excluded from audits and, with some exceptions, most leading brands miss out on one or another aspect of ILO8 in their supply chain compliance management.

Figure 8. Impact due to non-compliance of ILO8 in the value chain

Figure 9. Components of ILO8 that are included in the brands' sustainability management

31% Anti-union discrimination

36% Freedom of association

2% Right to strike

31% Collective Bargaining

---
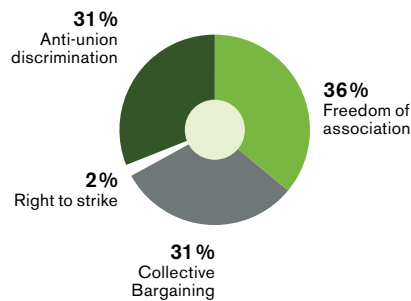
[18] 83% of the ILO members countries has ratified Convention No. 87, Freedom of association and Protection of the right to Organise, 1948 (ILO, 2017a). 88% of the ILO members countries has ratified Convention No. 98. Right to Organize and Collective Bargaining Convention, 1949 (ILO, 2017b).

Industry analysis – Detailed results

This section will go through the detailed results for Circular Economy and ILO8 which has been the basis for the key risks and opportunities that is presented in the foregoing section.

Circular economy

In this section, the different topics that have been identified for Circular Economy will be presented. Each topic is going to connect either to reuse, recycling, reduce or several of those. The main sources for the information in this analysis is the Responsible Electronics report by the EICC (2016) and an interview held with Marcel Jacobs, the founder of Circl8 on the 18th of October 2018.

Minerals

Recycling of Rare Earth Elements

There is a lack of knowledge regarding the recycling of rare earth elements (REE). Raw material extractors and processors, brand and waste operators are the value chain actors that are the most impacted by this issue. The potential is environmental since increased recycling would decrease use of virgin materials and hence the impacts from mining. It is also operational since it would decrease the dependency on Chinese export of REE which stands for the majority of the exports world-wide. The key risk that has been identified is primarily regarding the environment and corruption. The continued use of virgin REE will drive environmental impacts from mining. Further, falsification of the REE origin is a corruption practice that is common in China to circumvent administration when exporting REE. This issue is also a financial risk since this process is more expensive, and it is a legal and operational risk since corruption is illegal and makes the flow of REE less robust.

Recycle conflict minerals

Increased recycling of conflict minerals has the greatest potential for the raw material acquisition and processing companies, the assemblers, the IT brands and the waste operators. The opportunity is mainly environmental and social, since decreased use of virgin conflict minerals will decrease the impacts from mining and reduce the funding of rebel groups in these areas. This is mainly a reputational potential but also a legal one. Companies may reep reputational benefits but there are also legal opportunities in pro-actively adapting to future legislation. The key risks regarding this issue is that continued use of conflict minerals could potentially damage the brand and new legislation is on its way in the EU.

Recycling gold and tin

Gold and tin are used in devices that have a short lifespan, which drives resource consumption and raises the concern that these minerals could become over-mined. These minerals also have a high environmental footprint. Hence, the largest potential for this issue is environmental and reputational since increased recycling of gold and tin would decrease the environmental footprint of products. The key risks that have been identified are environmental. The first is operational since there is a risk for over-mining which would limit supply and also production as a consequence, the other is reputational since continued use of virgin gold and tin will drive environmental impacts from mining, potentially causing reputational damage.

Recycle critical minerals

Neodymium, dysprosium, terbium and erbium are examples of critical minerals in the production of IT products and concerns brands, users, retailer and waste operators in the value chain. The potential for these

materials is mainly environmental and reputational since decreased use of virgin material would limit environmental impacts from mining that could lead to reputational benefits. The key risks for these materials are financial and operational due to limited supply that would limit production and hence revenue.

Recycle similar WEEE together

There are gains to be made if similar Waste of Electric and Electrical Equipment (WEEE) are recycled together since minerals would not be diluted as much. The opportunity is governmental and financial as this would make the recycling system more efficient thus saving money.

Urban mining

Urban mining could in the future increase recycling of minerals, which would have the highest impact on raw material extractors and processers, brands and waste operators. The greatest opportunity that has been identified is environmental since it would decrease the use of virgin materials hence decreasing the environmental impacts from the extraction of virgin resources. This would yield a reputational gain since the environmental footprint of the products decreases and a financial gain since new products can be launched on the market. The key risk that has been identified is reputational for those companies who fail to meet stakeholder expectations on decreasing e-waste. Further, a key social risk in an urban mining system is the use of child labor, forced labor or exploitation of migrant workers in the recycling industry. This could lead to reputational damages for the Brands involved.

Cobalt recycling/reuse needs more research

There is a lack of knowledge regarding the feasibility of the reuse and recycling of cobalt. The value chain actors that are affected most by this issue are raw material extractors and processers, brands and waste operators. Increased recycling of cobalt would limit the use of virgin material hence limiting the cash flow to rebel groups and decrease the environmental impact from mining. Therefore, opportunities are environmental, social and governmental but also reputational since limiting these impacts could result in a positive brand effect. Moreover, a more efficient and reliable supply of cobalt would be a governmental opportunity that could have positive reputational benefits since it would lead to more security in the delivery of products. The key risks for cobalt have several dimensions. Cobalt could be seen as a conflict mineral, which brings a social risk, and since mining is made under questionable conditions it is also an environmental risk that could lead to reputational damage. Further, there is a corruption risk that migrant workers sell cobalt on the black market, also leading to reputational damage.

Glass

Reuse glass

The value chain actors that are in concern regarding reuse of glass are raw material extractors and processers, component manufacturers, brands and waste operators. The opportunity is environmental and reputational since increased use of reused glass will decrease the environmental impact from the production of virgin glass and consume less energy than glass recycling. This could lead to reputational benefits. The key risk that has been identified is governmental and operational, since it is hard to find glass that matches the manufacturers' specifications and therefore it is not very feasible to reuse glass.

Recycle glass

Value chain actors affected by this topic are raw material extractors and processors, component manufacturers, assemblers, brands and waste operators. The potential that has been identified is primarily environmental. It is uncertain whether recycling of glass will decrease or increase energy use and hence environmental impacts. Some glass-recycling systems are energy intensive which means both environmental and governance-related risks. On the other hand, energy-efficient systems can lead to environmental as well as reputational benefits. Further, a governmental and operational risk is also the lack of pure recycled glass. The value chain needs to be specialized and maintained to ensure that glass has a good quality when recycled.

Decrease e-waste by reducing glass use

The best way to limit impact from glass is to reduce use, especially for the types of glass for which we today lack feasible recycling methods. An example of this is CRT-screens that have used glass with lead which cannot be recycled properly today and there is no market for CRT-screens. The opportunity is environmental since there are large stockpiles of resources in e-waste that can be used instead of virgin material, which in turn implies financial and reputational benefits. The other way around, not limiting the use of non-recycled glass will lead to growing e-waste and both environmental and reputational damage.

Design products with glass that can be recycled

The design of a product is crucial regarding the ability to recycle the glass. This concerns mainly raw materials extractors and processors, component manufacturers, assemblers and brands. The opportunity is environmental since decreased use of virgin materials will decrease environmental impacts from mining and potentially have financial benefits. The key risks that have been identified are governmental and operational since some high-end products, such as

high-spec application screens, are sensitive to impurities which makes recycled glass a less favorable option.

Plastics

Reuse

Continued use of fossil-based plastics will drive increased levels of GHG emissions and induce climate change. With this come multiple risks that are primarily environmental but also reputational if the brand is seen by users as backward and conservative. The growth of reused plastics will decrease the environmental impacts from production of virgin plastics. Suppliers of components often find it hard to match brand specifications on plastic. Low-cost plastic is often worn-out quickly, this is not only a quality issue but also an educational hurdle for manufacturers whom do not always review options. The adaptation to reused plastics often entail process change or investments. The end-consumers are not well informed on plastic types but increasingly request products made from reused plastics, as these are a growing trend and a marketing tool towards new customers.

Recycling

Reuse and/or recycling is feasible if the same plastics are looped back to the same company, where PC plastics and ABS plastics are the most valuable. Styrene is a worse choice in terms of recycling. A challenge for the waste and raw material industry is that it is hard for recycled plastic to maintain its specifications in terms of strength and color. An opportunity for the whole IT industry is the development of interchangeable parts that could minimize the use of plastics in the whole life cycle of devices.

Reduction

As reduction of plastics is a key issue for the IT industry, there is an increasingly large amount of legal changes and bans being enforced and introduced to primarily minimize plastic waste but also to reduce the use of fossil-based plastics as a whole. There is a

growing movement amongst users to initiate circular economy models such as sharing services, leasing formats and group use of IT products.

Harmonizing the types of plastics

The reuse process would be made simpler if just a few common types of plastics were used throughout the industry. Currently there is very strong lobbying against system changes as these could jeopardise positions and traditional sales systems.

Packaging

Reuse of packaging

The potential in reuse, reduction and recycling is primarily environmental through decreased consumption of virgin materials, giving reduced GHG emissions and less waste generated. Reuse of packaging could be a reputational advantage for brands that manage to stay ahead of legal requirements. A lowered cost from procurement of reused materials is to be found in a mid to long-term perspective. The key risks are financial and operational as legal infringements on virgin material may disrupt current operational patterns. The oversight of adaptation to public opinion on the overuse of virgin material for packaging may give reputational damage. Reuse of packaging holds the greatest impact potential for IT brands, the users, retailers and waste operators.

Recycling of packaging

Packaging is recycled more routinely today as there are demands from the brands placed on the majority of the value chain, spreading from assembly, to brands operations, retail users and waste managers being instrumental in an efficient process. Brands should take extra note on risks with so called green washing that could come with single-sided focus on recycling only as media and general public are looking for a systemic change. Environmental and reputational benefits are low hanging fruits for the industry to pick as a measure to decrease environmental impact by investing in systems to make recycling of packaging material a standard routine.

Reduction of packaging

Reduction of packaging is a complex issue in the full value chain given the numbers of parties involved in multiple countries and industries spanning from raw material, component manufacturing, assembly, brand, retail, user to waste management. Several countries have started banning single-use plastic packaging, resulting in that the industry will have to address a process change which will initially raise costs and non-compliance could give legal and financial consequences. The reduction of virgin materials is both a risk and an opportunity from a raw material perspective, placing great weight on research and development of the replacement of plastic with new sustainable, renewable or long-term durable substitutions. The opportunities are vast with great environmental benefits and increased customer and brand value. Synergy effects can be found between reduced packaging and extended lifespan of electronic products. However, this does come with fairly substantial financial costs for increased R&D and education of the parties in the value chan.

Worker's rights

This analysis shows the compliance of ILO8 and where risks lie through the relevant countries in the IT industry's value chain. The countries included in this analysis were identified from social lifecycle assessments of IT products made by Ekener and Finnveden (2013) and Ciroth and Franze (2011).

South Africa

Freedom of association, collective bargaining, the right to strike and anti-union discrimination laws are provided by South African law but is only partly respected (US Department of State, 2017). There are for example reports of violence between striking and non-striking workers (US Department of State, 2017). South Africa is a relevant country in the first part in

the value chain, raw material acquisition and processing, and is one of the main providers of gold (Ekener and Finnveden 2013).

Democratic Republic of Congo (DRC)
Freedom of association, collective bargaining, the right to strike and anti-union discrimination laws are provided by DRC law but is not respected (US Department of State, 2017). For example, workers in small and medium-sized enterprises cannot use their rights in practice due to slack enforcement of labor laws (U.S. Department of State, 2017).

Relevant parts of the value chain: raw material acquisition and processing (Ekener and Finnveden 2013).

Nigeria
Freedom of association, collective bargaining and the right to strike are only partly provided by Nigerian law and anti-union discrimination laws are not in place, however, the laws are respected (US Department of State, 2017). Examples of restrictions are that personnel in what is defined as "essential services" do not have the right to join and form unions and not have the right to strike (U.S. Department of State, 2017).

Relevant parts in the value chain: waste management (Ekener and Finnveden 2013).

Ghana
Collective bargaining and anti-union discrimination is provided by the Ghanaian law but the right to bargaining collectively and the right to strike is only provided partially (U.S. Department of State, 2017). Workers' groups in what is called "essential services" do not have the right to strike, to name an example (U.S. Department of State, 2017).

Relevant parts in the value chain: waste management (Ekener and Finnveden 2013).

USA
Freedom of association, collective bargaining and the right to strike is provided by US

legislation but the legislation is not respected (Human Rights Watch, 2000). Anti-union discrimination is however provided (National Labor Relation Board, 2017).

USA is also a main provider of several raw materials, such as gold, quartz crystals and crude oil (Ekener and Finnveden 2013).

Relevant parts in the value chain: raw material acquisition and processing, component manufacturing, assembly (Ekener and Finnveden 2013) and Brands (own).

Chile
Collective bargaining and anti-union discrimination laws are provided but freedom of association and the right to strike are only partly provided by Chilean law, but the laws are respected (U.S. Department of State, 2017).

Relevant parts of the value chain: raw material acquisition (Ekener and Finnveden, 2013).

Canada
Freedom of association, collective bargaining, the right to strike and anti-union discrimination laws are provided by Canadian law and are respected (US Department of State, 2017). Canada is a main provider of lascas (natural quartz) (Ekener and Finnveden, 2013).

Relevant parts in the value chain: raw material acquisition and processing (Ekener and Finnveden, 2013).

China (incl. Hong Kong)
Only one union is recognized under Chinese law, the All-China Federation of Trade Unions, hence there is no freedom of association or right to strike (U.S. Department of State, 2017). Collective bargaining is however provided together with anti-union discrimination, but the laws are only partly respected. For example the government actively punishes labor right defenders (U.S. Department of State, 2017).

*Relevant parts in the value chain:
raw material acquisition and processing,
component manufacturing, assembly
and waste management (Ekener and
Finnveden, 2013).*

Thailand

Freedom of association and collective bargaining is only partly provided by Thai law and the right to strike and anti-union discrimination laws are provided with several restrictions (U.S. Department of State, 2017). The laws in place are only partly respected (U.S. Department of State, 2017). Further, Thailand is one of the main exporters of crude oil in the IT value chain (Ekener and Finnveden, 2013).

Relevant parts of the value chain: raw material acquisitioning and processing (Ekener and Finnveden, 2013) but also in the component manufacturing part of the value chain (Ciroth and Franze, 2011).

Saudi Arabia

There are no laws that provide any of the rights under ILO8 in Saudi Arabia (U.S. Department of State, 2017). Saudi Aribia is a main provider of oil to the IT industry (Ekener and Finnveden, 2013).

*Relevant parts of the value chain:
raw material acquisition and processing
(Ekener and Finnveden, 2013).*

Philippines

Freedom of association, collective bargaining, the right to strike and anti-union discrimi-nation laws are only partly provided by the Philippinian law and the laws are only partly respected (U.S. Department of State, 2017). There is anti-union behavior reported by companies, and foreign workers do not have any worker's rights (U.S. Department of State, 2017).

Relevant parts of the value chain: component manufacturing (Ciroth and Franze, 2011).

Indonesia

Freedom of association, collective bargaining, the right to strike are only partly provided and anti-union discrimination laws are fully provided by the Indonesian law and the laws are only partly respected (U.S Department of State, 2017). There is an increasing trend to use contract labor, or to fire all workers at a factory and rehiring only those not member of a union (U.S. Department of State, 2017).

Relevant parts in the value chain: raw material acquisitioning and processing part of the value chain (Ekener and Finnveden, 2013).

The Republic of Korea

Freedom of association and collective bargaining is provided by the Korean law, together with the right to strike but with restrictions (U.S. Department of State, 2017). There are no laws to protect union members of discrimination and the laws are only partly respected (U.S. Department of State, 2017). Since 2015, labor rights in the country also applies for migrant and undocumented workers (U.S. Department of State, 2017). There are reports both by the UN and International Trade Union Confederation of anti-union practices by private companies and there is a very narrow description of legal reasons for conducting a strike (U.S. Department of State, 2017).

Relevant parts in the value chain: component manufacturing and assembly (Ekener and Finnveden, 2013) but also in raw material acquisition (Ciroth and Franze, 2011) and processing as well as brand (own).

Taiwan

Freedom of association, the right to strike and anti-union discrimination laws are provided and the right of collective bargaining is partly provided by Taiwanese law and the laws are respected (U.S. Department of State, 2017). Since workers in companies with less than 30 employees are excluded from collective bargaining, the percentage of the workforce that are part of a collective

agreement is low (U.S. Department of State, 2017).

Relevant parts in the value chain: component manufacturing, assembly (Ekener and Finnveden, 2017) and brand (own).

Japan
Collective bargaining and anti-union discrimination laws are provided and freedom of association and the right to strike is partly provided by Japanese law and the laws are respected (U.S. Department of State, 2017). Public workers have a restricted freedom of association and they do not have the right to strike (U.S. Department of State, 20179).

Relevant parts of the value chain: assembly (Ekener and Finnveden, 2013).

Malaysia
There is severe restriction to the freedom of association, the right to collective bargaining and the right to strike in Malaysian law, and there is no legislation against discrimination of union members (U.S. Department of State, 2017). Unions can only provide limited protection for workers and especially foreign workers are hard to protect (U.S. Department of State, 2017).

Relevant parts of the value chain: component manufacturing and assembly (Ekener and Finnveden, 2013).

Singapore
Collective bargaining and anti-discrimination laws against union members are provided by the law in Singapore, together with restricted freedom of associations and right to strike (U.S. Department of State, 2017). The laws in Singapore are respected (U.S. Department of State, 2017).

Relevant parts of the value chain: component manufacturing and assembly.

Russia
Freedom of association and anti-discrimination laws against union members are provided together with a restricted right to collective bargaining and to strike (U.S. Department of State, 2017). The laws are however respected (U.S. Department of State 2017). Russia is one of the main providers of crude oil to the IT industry (Ekener and Finnveden, 2013).

Relevant parts of the value chain: raw material acquisition and processing (Ekener and Finnveden, 2013).

UK
Freedom of association, the right to collective bargaining, the right to strike and anti-discrimination laws for union members are all provided by the law in UK and the laws are respected (U.S. Department of State, 2017).

Relevant parts of the value chain: component manufacturing, assembly and waste management (Ekener and Finnveden, 2013).

Belgium and Germany
Freedom of association, the right to collective bargaining, the right to strike and anti-discrimination laws for union members are all provided by the law in Belgium and Germany and the laws are respected (U.S. Department of State, 2017).

Relevant parts of the value chain: waste management (Ekener and Finnveden, 2013).

Poland
Freedom of association, the right to collective bargaining, the right to strike and anti-discrimination laws for union members are all provided by the Polish law (U.S. Department of State, 2017). However, the laws are only partly respected since workers that organize are discriminated against (U.S. Department of State, 2017).

Relevant parts of the value chain: waste management (Ekener and Finnveden, 2013).

Australia

Freedom of association, the right to collective bargaining, the right to strike and anti-discrimination laws for union members are all provided by the law in Australia and the laws are respected (U.S. Department of State, 2017). Australia is one of the main providers of aluminum and gold to the IT industry (Ekener and Finnveden, 2013).

Relevant parts of the value chain: raw material acquisitioning and processing (Ekener and Finnveden, 2013).

Peru

Freedom of association, the right to collective bargaining and the right to strike is provided with restriction but there are laws against discrimination towards union members (U.S. Department of State, 2017). There are significant delays in the collective bargaining process, contract labor is used to circumvent direct employer relationships and the management sometimes interferes with union processes thus the laws are only partly respected (U.S. Department of State, 2017).

Relevant parts of the value chain: raw material acquisitioning and processing (Ekener and Finnveden, 2013)

Bolivia

Freedom of association, the right to collective bargaining, the right to strike and anti-discrimination laws against union members are provided by Bolivian law but is only partly respected (U.S. Department of State, 2017). It takes a long time to solve labor disputes and a company needs to have 20 workers in order to form a union, which is a great limitation (U.S. Department of State, 2017).

Relevant parts of the value chain: raw material acquisitioning and processing (Ekener and Finnveden, 2013).

Brazil

The right to strike and anti-discrimination laws against union members is provided, together with restricted rights to freedom of association and collective bargaining but the laws are respected (U.S. Department of State, 2017). Brazil is a main provider for aluminum, iron and quartz crystal to the IT industry (Ekener and Finnveden, 2013).

Relevant parts of the value chain: raw material acquisitioning and processing (Ekener and Finnveden, 2013)

ASF Advisory Board

Uppsala Municipality
Alfa Laval
H&M
Systembolaget
Nordea
SKL Kommentus
Malmö Municipality
Ikea

References

- CDP & WWF (2013).
  The 3% solution – Driving Profits Through Carbon Reducing.
- Ciroth, A. & France, J. (2011).
  LCA of an ecolabled notebook: consideration of social and environmental impacts along the entire lifecycle.
- EICC. (2016).
  Responsible Electronics unified for impact.
- Ekener-Petersen, E. & Finnveden, G. (2013).
  Potential hotspots identified by social LCA – part 1: a case study of a laptop computer. The international Journal of lifecycle Assessment. 18(1): pp.127-143.
- Ellen MacArthur Foundation. (2017).
  What is Circular Economy? [Accessed: 2018-11-08]
  Available at: ellenmacarthurfoundation.org/circular-economy/concept
- *Enact.* (2018). Summary Report. Support with ASF customer survey Desk-top research and dialogue with experts.
- European Commission (2015).
  Closing the loop – An EU action plan for the Circular Economy. [Accessed: 2017-11-08].
  Available here: eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0614
- Global Reporting Initiative (GRI). (2018).
  GRI Standards Glossary.
- Greenhouse Gas Protocol (2015).
  A corporate Accounting and Reporting Standard – Revised Edition.
- Human Rights Watch. (2000).
  Unfair Advantage. Workers Freedom of Association in the United States under International Human Rights Standards. [Accessed: 2018-11-09]
  Available at: hrw.org/reports/pdfs/u/us/uslbr008.pdf
- International Labour Organisation (ILO). (2018).
  8.Freedom of Association and Collective Bargaining. [Accessed: 2018-11-08]

- Available here: ilo.org/global/topics/dw4sd/themes/freedom-of-association/lang--en
- International Labour Orgaisation (ILO). (2017a).
  Ratifications of C087 – Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87). [Accessed: 2019-01-11] Available at: <https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312232>
- International Labour Organisation (ILO). (2017b).
  Ratification Co98 - Right to Organise and Collective Bargaining Convention, 1949 (No. 98). [Accessed: 2019-01-11] Available at: <https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312243>
- Kantar Sifo. 2018.
  Atea – Customer Dialogue.
- National Labor Relations Board. (2017).
  Discriminating against employees because of their union activities or sympathies (Section 8(a)(3)). [Accessed: 2018-11-09]. Available at: nlrb.gov/rights-we-protect/whats-law/employers/discriminating-against-employees-because-their-union
- Responsible Business Alliance. (2018).
  About the RBA. [Accessed: 2018-12-04]
  Available at: responsiblebusiness.org/about
- Responsible Business Alliance. (2019).
  RBA Compass Awards. [Accessed: 2019-01-09]
  Available at: responsiblebusiness.org/compass-awards
- Science-based Targets. (n.d).
  What is a science based target? [Accessed: 2019-01-09]
  Available at: sciencebasedtargets.org/what-is-a-science-based-target
- U.S Department of State. (2017).
  Country Reports on Human Rights Practices for 2017. [Accessed: 2017-11-05]
  Available here: state.gov/j/drl/rls/hrrpt/humanrightsreport

Find out more about Atea Sustainability Focus at
atea.se/asf

ATEA SUSTAINABILITY FOCUS 2019