

Research Report

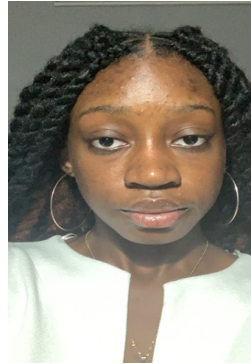
COMMITTEE: Digital committee

ISSUE: How to limit the environmental footprint of smartphones?

CHAIRS: Andres VIANA OPORTO, Norah Moya OUEDRAOGO

How to limit the environmental footprint of smartphones?

INTRODUCTORY STATEMENT OF THE CHAIRPERSON



Hello dear delegates, my name is Norah Ouedraogo. I am a final-year student at the Lycée International Jean Mermoz, in Abidjan, Ivory Coast and I am your co-chair this year. I am from the Ivory Coast, the country of Olivia Yace, Didier Drogba and DJ Arafat whom you may know. Passionate about geopolitical issues and international relations, I love instructive debates, especially the debates we have around meals with my parents or in class. Involved in the MUN for a few years, this activity allows me to deepen my intellectual curiosity and my general knowledge to acquire many skills and as a springboard to the world in a multicultural and multilingual context. As far as our digital committee is concerned, I will be delighted to exchange with you on subjects that involve technology, environmental protection and sustainable development challenges. In fact, I use my phone a lot to do research, watch movies on Netflix, and study. And I change to a reconditioned phone every year to avoid bugs and reduce CO2 emissions when it nears the end of its life. What about you?

KEYWORDS

Smartphone: literally means "smart phone". It is a telephone device with advanced features, beyond making phone calls and sending text messages. Most smartphones, usually touchscreens, allow access to the Internet, reading and sending emails, listening to music, watching movies, playing games and taking pictures and videos.

Environment: the set of elements surrounding an individual or a species which contribute to their subsistence. Or the combination of natural and cultural conditions acting on living organisms and human activities. One of the definitions of the European Union is: "the sum of the elements which, in the complexity of their relationships, constitute the framework, the medium and the conditions of life for humankind".

Environmental footprint: also called ecological footprint, is defined as an environmental indicator that measures the impact of human activity on our planet. In other words, calculating the environmental footprint allows us to determine the pressure exerted by man on nature.

End of life: refers to the final moments of the life of an object/product reaching its expiry date or its obsolescence.

Life cycle: All the stages constituting the existence of an object, from the extraction of raw materials, through its manufacture, transport and use, to its end of life.

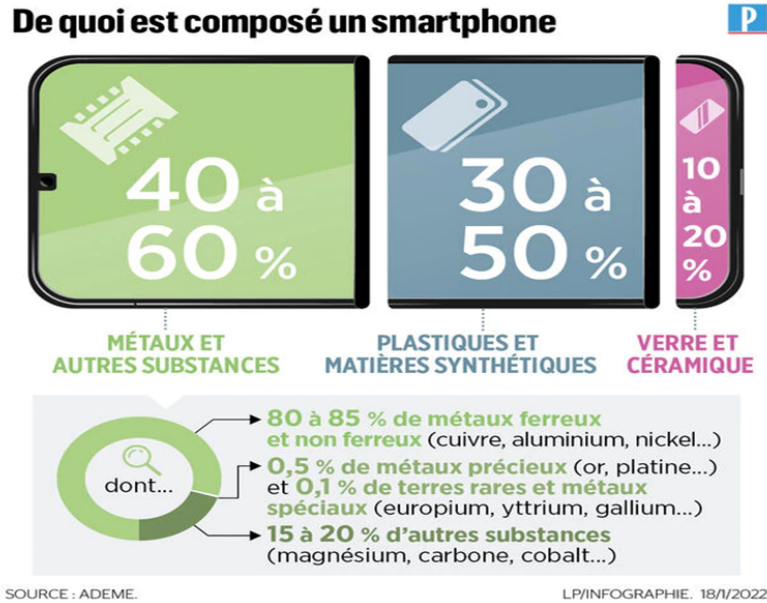
Recycling: Any recovery operation by which waste, including organic waste, is reprocessed into substances, materials or products for its original function or for other purposes. Waste-to-energy operations, waste-to-fuel operations and landfill operations do not qualify as recycling operations.

Reconditioning: giving a second life to an object by restoring it to its original condition after one or more uses.

OVERVIEW

The smartphone is now part of our daily routine and has taken an important place in our lives. More and more connected, we cannot do without them to make phone calls, but especially to surf the Internet, share information on social networks, take pictures, listen to music, be guided by GPS etc. Every year, new and more powerful smartphones flood the market. But have you ever thought about the impact of smartphones? How are they manufactured? What happens to them at the end of their life?

First of all, manufacturing technologies have significantly evolved in recent years. We know how to make extra thin and very sophisticated phones, with more and more features. Today, there are more than 70 different materials in a smartphone. These materials are present in small quantities and their sometimes complex alloy makes many of them difficult to recycle. About 50 metals are needed to manufacture a smartphone, twice as many as for an old generation cell phone. However, these metals are becoming more and more complex to exploit around the world.

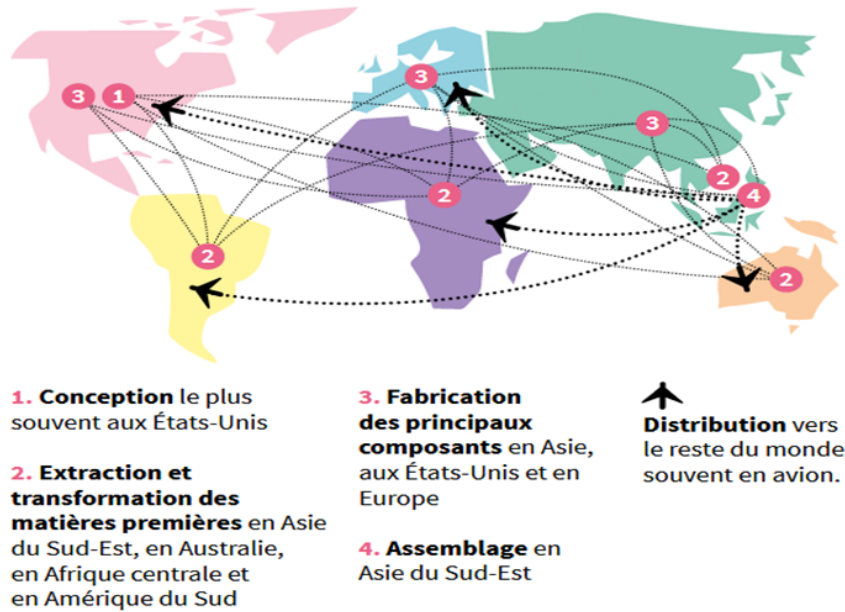


Moreover, throughout its life cycle (from raw material extraction, through manufacturing, transportation, its use and end of life), a smartphone has impacts on the environment. The main environmental impacts of smartphones are the depletion of resources, damage to biodiversity due to toxic emissions into the environment and the emission of greenhouse gases. The manufacturing of a smartphone (from mineral extraction to final assembly) is responsible for about three quarters of these impacts, which are mainly attributable to the screen and the complex electronic components (microprocessors, etc.). The distribution and use of smartphones have fewer impacts. They are mainly related to the energy consumed for transportation and electricity production. The end-of-life stage has variable impacts depending on whether the smartphone is recycled or not.

The programmed obsolescence used by some companies artificially shortens the lifespan of smartphones, forcing users to change them more often than necessary, thus increasing the extraction of raw materials and the amount of waste from electrical and electronic equipment.

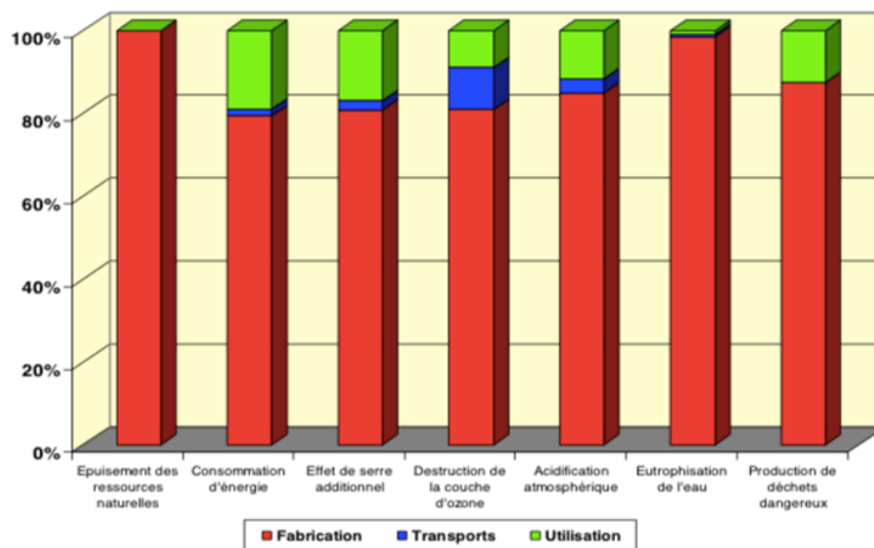
Today, when a smartphone is recycled it can either be reconditioned or if not possible recycled. As far as the recycling process of a smartphone is concerned, it is currently limited and does not allow the recovery of rare earths like lithium. However, even the rarest metals like gold or silver can be recovered. Recycling also has the advantage of creating much more secure jobs than those created by mining. Moreover, unlike mining, recycling centers can be set up anywhere in the world regardless of the level of wealth of the soil. Intergovernmental actions have already been taken such as the EU which has set a target of recycling 65% of waste electrical and electronic equipment.

QUATRE TOURS DU MONDE POUR FABRIQUER UN SMARTPHONE



Source : Carte des étapes de la fabrication d'un smartphone publiée dans <https://presse.ademe.fr/wp-content/uploads/2017/09/guide-pratique-impacts-smartphone.pdf>

In addition to these environmental impacts, there are also social and health impacts... In Argentina, Bolivia and Chile, the abundant use of water for lithium production is causing conflicts with local populations and threatening their survival. In Ghana, Brazil and French Guiana, thousands of hectares of forest and indigenous peoples are threatened by the extraction of gold, tantalum, copper, bauxite and manganese. In the DRC, according to UNICEF, more than 40,000 exploited children work in deplorable conditions in cobalt and coltan mines, strategic minerals that are used to make batteries and capacitors for smartphones.



Life cycle analysis of a cell phone - ADEME©

UN TREATIES AND MAJOR MILESTONES

02/08/2015

193 member countries of the United Nations have adopted **the 17 Sustainable Development Goals (SDGs)**. They are a global call to action to eradicate poverty, protect the planet and ensure that all people live in peace and prosperity by 2030. A smartphone involves CO₂ emissions, pollution and even bloodshed. Making smartphones more sustainable and ethical would contribute to the achievement of the SDGs, especially goals 12 and 13.

14/06/2021

The Circular and Fair ICT Pact (CFIT) has been officially signed by the Netherlands, Belgium, Germany, Norway, England, Austria and Switzerland. Discussions are also underway with several other countries, including Canada. The signatory countries want to make the production of laptops and smartphones more circular, sustainable and ethical, as this sector is responsible for more than 2% of global CO₂ emissions. The goal of the Pact is to create a network of buyers who jointly create a significant market demand for circular and ethical laptops and smartphones, and thus encourage producers to orient their manufacturing and continue to innovate.

06/02

Launched at the initiative of the French writer Phil Marso, **the World Day without mobile phone**, invites the public, over three days, to reflect on their use of mobile phones. Each year, the Day without a mobile phone proposes a theme for reflection. The aim is to foster a debate about this communication tool. In 2015, for example, the theme chosen was the environment, with pointers for further reflection, such as:

- Many heavy metals and organic pollutants are used to make your smartphone. These substances lead to a rat race for extraction, environmental degradation and even wars (like in the Republic of Congo).
- Employees in production plants are exposed to poisons during the manufacturing of smartphones.
- Many children are exploited by unscrupulous multinationals which will sell you these fabulous toys (at a premium).
- The life cycle of smartphones is not properly understood, and many polluting components escape recycling.
- Will the proliferation of electromagnetic waves from smartphones have an impact on the climate?

POTENTIAL SOLUTIONS

Some examples of non-exhaustive solutions to make an informed choice of smartphone and thus limit the environmental impact of this connected object.

1. Think before you buy a smartphone: ask yourself questions: do you really need a new phone or does the old one work? If you choose to buy, select features that will really be useful to you. Do not choose the latest phone because the advert has convinced you! The bigger the smartphone or the more features it has, the more it pollutes. So be reasonable and choose a model that is closest to your needs.
2. Prioritize purchasing a more ethical phone, such as the Fairphone. Produced by a Dutch company, the Fairphone has a minimal impact on the environment and the company is committed to respecting human rights throughout the production process. The company is a member of the United Nations Global Compact, which encourages companies in all sectors to adopt sustainable and socially responsible policies and to report transparently. Members of the Compact also commit to the SDGs.
3. Establish incentives or subsidies to reward innovative companies in the high-tech field, and more specifically those that design smartphones that meet sustainable development objectives.
4. Create and promote collection centres for old smartphones, especially in developing countries, which would be redeemed with vouchers, to promote the sorting and recycling of smartphones. This is essential to get the circular economy going. 85% of mobiles are sleeping in drawers... When they could be living a second smartphone life cycle and being reconditioned.
5. Implementing higher taxes by States for companies that design smartphones that do not meet sustainable development principles.
6. Raise awareness about the detrimental environmental, social and health impacts of smartphones.

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