"The products we procure are durable and can be reused, refurbished, and ultimately recycled through verifiable partners and supply chains when we have finished with them"

Buy better

Use longer

Case study

Strategies to introduce more circular and fair mobile phones

Government of Flanders I Belgium

2023–2024

Impact categories:

Product categories:

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This case illustrates elements of the following CFIT Commitments:

- The products we procure are durable and can be reused, refurbished, and ultimately recycled through verifiable partners and supply chains when we have finished with them

The purpose of this series of cases is to illustrate what the implementation of commitments of the CFIT framework for circular and fair procurement of ICT can look like. Please note that these case descriptions focus on one element of a tender or process which generally includes many more sustainability requirements.

FAIRPHONE

Circular & Fair ICT Pact

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Strategies to introduce more circular and fair mobile phones

Introduction
Introducing new and more sustainable IT products may occasionally lead to resistance from within the organization. Managers and users might be hesitant due to higher initial costs and may question whether the products are indeed more sustainable. They may have doubts concerning reliability and performance as compared to more familiar brands or products, or people may argue that internal procedures would require adjustment.

This case study examines two complementary projects initiated by Flemish organizations aimed at exploring the feasibility and benefits of introducing the Fairphone, a modular and reparable smartphone, as a sustainable alternative to conventional Android mobile devices. The projects also aim at demonstrating if, and if so how, this supports the circular and climate objectives of the organizations.

The two projects, one by the Public Waste Agency of Flanders (OVAM) and the other by the Government of Flanders' Department of Environment and Spatial Development (departement Omgeving or DOMG), respectively focus on assessing:
- user acceptance and satisfaction,
- climate impact reduction through extended device lifespan, and economic savings from a Total Cost of Ownership (TCO) perspective

What was implemented?

Assessing user satisfaction
The first project was conducted by OVAM, the Flemish Waste Agency responsible for promoting sustainable waste management and circular economy practices in Flanders. As part of their internal environmental strategy, the environmental committee works with different departments to green their internal operations, including IT products purchased and used by OVAM's staff. Motivated by the organisation's goal of reducing environmental impacts and promoting resource efficiency by encouraging the use of products with extended lifespans, various OVAM employees contacted the IT team to suggest to buy Fairphones. The market launch of Fairphone 4 prompted the team, in collaboration with the IT department, to test the suitability of this product.

From January to July 2023, the team conducted a two-phase pilot project to assess the feasibility of adopting the Fairphone as an alternative smartphone for its employees:
- The IT team used an existing framework agreement to buy 25 Fairphones 4. Twenty phones were for the pilot test, four for the IT team and one for the project leader of the environmental committee.
- Three pilot groups of 10 users were formed. The first group consisted of volunteers. The second group, chose a Fairphone when they needed a new phone. Users in the third group chose a conventional Android the when they needed a new phone.

All 30 volunteers, 20 Fairphone users and 10 users of another Android device, filled in three surveys over a 6 month period. The survey included questions on overall performance, battery life, photo and video quality, call quality and storage. The results of the pilot showed that the employees using the Fairphone were more satisfied about the device than users of the other Android option. This resulted in the decision to introduce the Fairphone as an option in OVAM's device catalogue, allowing staff to choose between two Android options. Since the introduction of the Fairphone in the catalogue a total of 50 Fairphones have been purchased (about 75% of the total number of phones purchased in this period).

Assessing the environmental and economic benefits

The Flemish Department of Environment and Spatial Development (departement Omgeving or DOMG) is a committed climate-neutral organisation. IT being one of the product categories impacting the scope 3 emissions of the Department, several actions have been put in place to improve the environmental performance of this product category. One of the strategies to reduce the carbon impact of smartphones is to increase the useful life of the devices through product repair, rather than replacement. This means that availability of spare parts needs to be good, and reparability relatively easy. Since the Fairphone is known for its reparability and durability, the Department decided to commission a study to evaluate the potential environmental and economic advantages of introducing Fairphone 5 as the default Android phone for employees. Employees can choose if they want an Android device or an iOS device.

An analysis commissioned by the Department, conducted in 2024, evaluated the total cost of ownership (TCO) and carbon footprint of three phone models (Fairphone 5, the Android device currently offered and the iOS device that can be chosen by employees). The analysis was done using data publicly available from the manufacturers' websites, internal data and informed estimates regarding product life time extension based on their reparability, upgradability and software updates.

The outcomes were used to calculate the annual TCO and carbon impact for each model, based on the hypothetical usage in years (table 1) and the device prices in June 2024.

Table 1: TCO (blue column heading) and Carbon impact (green column heading) per device per year (*Analysis commissioned by DOMG – Price level: 24 June 2024*)

Number of years use (ambition)	Fairphone 5	Current Android	Current iOS	Fairphone 5	Current Android	Current iOS
1 year(s)	€ 715,15	€ 441,90	€ 474,32	37,74 kg	38,30 kg	42,01 kg
2 year(s)	€ 367,57	€ 247,31	€ 263,52	20,18 kg	21,22 kg	22,49 kg
3 year(s)	€ 248,38	€ 173,66	€ 184,47	14,26 kg	15,37 kg	15,82 kg
4 year(s)	€ 198,77	€ 155,59	€ 164,69	12,22 kg	13,45 kg	13,52 kg
5 year(s)	€ 161,02	€ 129,74	€ 137,03	10,26 kg	11,49 kg	11,31 kg
6 year(s)	€ 135,85	€ 112,51	€ 118,58	8,95 kg	10,19 kg	9,84 kg
7 year(s)	€ 123,57	€ 110,92	€ 116,69	8,54 kg	9,83 kg	9,38 kg

Expecting a useful lifespan of 5 years for the Fairphone 5 as compared to the current lifespan of the Android and iOS devices as reported by the IT team of DOMG (about 3 and 4 years respectively), the Fairphone 5 emerges as the most cost-effective and environmentally sustainable option over time, with a lower cost per year and reduced CO_2 emissions compared to the other models (see table 2).

Table 2: TCO and carbon impact per device per year, taking into account use time ambitions of DOMG (*Analysis commissioned by DOMG – Price level 24 June 2024*)

Model	Number of years use (ambition)	Cost/year (based on table 1)	CO_2/year
Fairphone 5	5 year(s)	€ 161,02	10,26 kg
Current Android	3 year(s)	€ 173,66	15,37 kg
Current iOS	4 year(s)	€ 164,69	13,52 kg

While the initial purchase is higher, the repair costs of the Fairphone 5 are lower than those of the other Android device. The longer lifespan of the Faiphone 5, in particular, helps to amortize these costs, making it more economical in the long run. The Fairphone 5 stands out due to its emphasis on self-reparability and the use of affordable modular parts, making it easier and cheaper to repair. Additionally, its extended software support ensures a useful life of more than five years, thus outperforming both Android and iOS devices in terms of longevity and carbon footprint. When the device lifetime proves to extend beyond 5 years, like the manufacturer indicates, the benefits are even bigger.

Transitioning the current fleet of Android devices to Fairphones over the next 3 years, accompanied by the necessary measures to use these devices for 5 years, will allow DOMG to save €6.526,27 and 2.637,45kg CO2 annually[1].

Based on the results, the project team has environmental and economic arguments to support the replacement of the current Android device with this more circular alternative.

However, to obtain the Board's approval, the project team must first sort out the procedure to manage device repairs. Currently, repairs are being done by manufacturers' approved repair shops, in line with the warranty requirements. Fairphone, however, doesn't have such a network of approved repair shops. Despite the easy reparability of the Fairphone, the Board is opposed to having each staff member repairing their phones themselves, so the project team is currently analysing how that could be managed, before being able to roll out the initiative.

Who was involved?

For both projects, collaboration between multiple internal teams and stakeholders was key to ensuring successful implementation.

- Project Teams: A dedicated team was responsible for designing, coordinating, and monitoring the projects. At OVAM the team was composed of five people from two unit(s). At DOMG the team was composed of three people.
- IT Department: In both projects, the IT Departments were key stakeholders. They assessed the feasibility of device repairs, integration into existing systems, and the potential impact on their workload and procedures.
- Head of Division: In both examples, the senior leadership was informed early in the process to secure their backing and ensuring alignment with organizational priorities and strategies.

Additional participation in the OVAM-project:
- Internal Communication Team: Facilitated a call for volunteers through internal communication channels, encouraging employees to participate in the testing phase.

Additional participation in the DOMG-project:
- HR Department: Consulted in the early phase of the project.
- Board of Directors: The board provided approval for the project and will make an informed decision about the replacement of the regular Android with the Fairphone, based on the detailed project analysis and adjustment of the procedures to manage repairs.
- External consultant: Responsible for conducting the analysis of the total cost of ownership and climate impact.

What were the outcomes and lessons learned at OVAM?

Outcomes:
- The feedback from survey participants was positive, with the Fairphone outperforming the current Android model. As a result, the organization decided in 2024 to include the Fairphone in the catalogue, allowing staff to choose between two Android phones.
- Without a dedicated communications campaign to promote the Fairphone, the uptake has been 75%.
- The capacity to do the repairs directly in-house is expected to reduce the workload of the IT Department. Currently, the department both is in charge of sending and collecting devices that need to be repaired. Performing the repairs in-house will probably take less time than currently required for handling the repairs.
- Based on the good results, the project team is now evaluating the purchase of refurbished phones for the few iOS devices that the organisation purchases. Staff members receive a refurbished iOS phone when they are in need of a new device. No survey is conducted as the iOS users among the staff are already familiar with the product (except for the fact that it's refurbished). The IT department will collect information on reliability of supply, guarantee on security updates, malfunctions and repair needs, to assess the viability of the products.

Lessons:
- A crucial lesson was the importance of close collaboration with the IT team and early involvement of the head of the department. Regular communication was key, including a team chat involving the project leader, the head of IT, and four IT team members to ensure smooth implementation. Taking the concerns of the IT team into consideration in an early stage of the project and validating them in the pilot has proved to be an important success factor.
- Early involvement of the head of department was very valuable to understand the key aspects from his perspective, such as security, price and user satisfaction.

- The involvement of the CEO as a tester helped to strengthen the credibility and impact of the pilot project, demonstrating leadership support for the initiative.
- A future pilot set-up would include include only randomised volunteers. During the project, the volunteers did not remember whether they applied or whether they were randomly selected, because of which the results could not be analysed per group.
- OVAM opted not to run a dedicated communications campaign to promote the Fairphone internally, relying instead on organic adoption, which indeed proved to be good.

What were the outcomes and lessens learned at DOMG?

Outcomes:
- Fairphone 5 emerges as the most cost-effective option over time, thanks to its emphasis on sustainability and self-repairability using lower-cost modular parts.
- The outcome of the study is still pending as the department has yet to sort out the process to manage repairs. But at least the environmental and costs benefits have been demonstrated convincingly.
- If the Board approves the replacement of current Android devices with this more circular alternative and if this results in a positive experience, the Department wants to promote the initiative to other entities within the Government of Flanders.
- On a different note, the project team developed a customizable Excel tool to help other organizations apply similar analyses with their own data [1].

Please note: the customizable Excel tool [1] should be considered as a 'quick scan' approach that uses LCA data published by manufacturers. Comparability of LCAs can be limited due to differences in underlying assumptions and data sources. The tool is considered by DOMG to be useful for internal decision making and a comparison of scenarios. The DOMG project team would not recommend its use as an award criterion.

Lessons:
- Like OVAM, DOMG found that the collaboration and involvement of the IT Department is key to identify implementation challenges and sort them out before rolling out the replacement of existing products.
- One of the major challenges was calculating repair costs. It proved difficult to find reliable internal data on repair expenses and external repair services, and to determine the number of repairs required over the device's lifespan. Better data collection processes for repairs should be put in place to facilitate benefits calculations, and monitor progress and assumptions.
- The project team is thinking about negotiating fixed conditions for the Fairphone options in the government's framework agreement to ensure adequate support and scalability for its fleet of about 170 new Android phones purchased annually.
- Last but not least, in addition to aiming to buy more sustainable phones, supporting measures to ensure that the device will indeed last 5 years or more, are also taken up. These include, for example, provision of a standard case and screen protector, as well as easy repair procedures.

References
[1] The report developed for DOMG on TCO and Carbon impact and the excel tool used for the report by DOMG can be found here: https://circularandfairictpact.com/flanders-feasibility-study-introduction-fairphone/

[2] Images provided by Fairphone

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