

Extending the lifespan of IT products

Leadership for Change is a network for organizations that have decided to lead the way for the sustainable transformation of IT by creating a market for sustainable products and solutions, and by implementing sustainable practices in their IT operations. One of the network's underlying principles is to share its best practices to provide guidance and inspiration to others. That way more organizations can take on the journey towards more sustainable IT.

This document contains a list of actions and measures undertaken by the members to extend the lifespan of their IT products and to reduce resource consumption. In other words, the list represents successful implementations. Read more about Leadership for Change [here](#).



Disclaimer

The information in this document is based on successful implementations by members of the Leadership for Change. The document can only be used as inspiration and guidance for organizations looking to prolong the lifespan of workplace-related IT products. Successful implementation of the actions listed, or certain effects cannot be guaranteed, and Leadership for Change member companies or Atea cannot be held accountable for the results.

The importance of extending the lifespan of IT products

IT devices, such as laptops and smartphones are complex products, filled with valuable metals and minerals, and put together in long, winding supply chains involving thousands of people. Despite this, their actual lifespan is short and too many devices are discarded before they have reached the end of their technical life. By making sure IT products get a longer life, organizations can address and mitigate many of the most pressing sustainability issues connected to the manufacturing and use of IT, while making sure the value of these products is fully utilized.



“[...] extension of the service life of ICT products has been identified as the main strategy for minimizing the total environmental impact of ICT products.”

Source: Prakash et al., 2016

High carbon and environmental footprint of production

IT devices come with a high environmental cost. As an example, the production of one laptop generates 1,2 tons of waste, and about 80 percent of a product's total carbon footprint is generated in the production phase.

Resource scarcity and geopolitical challenges

The global consumption of resources exceeds by far levels that are sustainable in

the long term. As mentioned, IT devices are complex. A smartphone contains 63 percent of the elements of the periodic table. Some of these elements are mined in areas of conflict where armed groups fight to control the natural resources. The pandemic also uncovered the vulnerability of global supply chains, with the chip shortage as one harsh reminder.

E-waste is skyrocketing

Electronic waste is the fastest growing waste stream in the world and is now

reaching 57 million tons a year globally. That's more than the weight of the Great Wall of China. Read more [here](#).

The good news is that IT-buying organizations can do a lot to extend the lifespan of IT products, which is demonstrated by the actions already taken by the members of the Leadership for Change. As a bonus, they have in many instances been able to save costs and resources while boosting internal pride.

Identifying and selecting best practices



1 A survey among all members to identify what they are currently doing to prolong the lifespan of IT devices in their organizations.

2 In-depth interviews with members with most implemented practices in order to get more context and to identify effects.

3 The actions were compiled. Similar actions were combined into one.

4 Finally, in two separate workshops, members added more context and removed actions that at this stage do not meet the criteria below. Work has also been done separately in each member's organization to review and comment on the actions.



The practices have been selected based on the following factors:

1. Real cases

The overarching criteria is that the action has been implemented by at least one member organization.

2. Potential effect

Actions have been assessed on their potential to impact lifespans and/or reduced resources consumption, even though these effects not yet have been

documented. The deemed to have the highest potential effect is listed first in each category.

3. Ease of implementation

The purpose of this guide is to inspire other organizations to take steps towards extending the lifespan of their IT devices. The members want to demonstrate how this can be done and by that help others along the way. Some of the actions listed in this guide can appear small; however, since they are easy to grasp and have

been easy to implement in members' organizations they have been included. Every steps count!



This document should not be viewed as a complete guide to extending lifespan of IT products, and the ambition is to launch new versions as members' efforts expand and more effects are documented.

The importance of building a sustainability culture



“We have been able to get employees to not spill coffee on their smartphone every time a new model is released.”

Many of the actions listed in this guide contribute to creating and maintaining a sustainability mindset within the organization. As one of the members put it: *“We have been able to get employees to not spill coffee on their smartphone every time a new model is released.”*

The cultural aspect cannot be underestimated, as a sustainability mindset will create a positive spiral where increased demand for sustainable solutions will spur change, and this change in turn will increase the demand.

CIOs and other decision makers need to pursue this cultural change in a very firm way. *“It won’t happen unless I think it is important”* as one of the CIOs in the network says. Many of the members highlight the importance of getting key stakeholders, such as Service Desk and IT professionals on board. It is especially

important for leaders to be role models, for instance by not having/requesting the latest models.

Policies and tradeoffs

Extending the lifespan of IT devices cannot happen in a vacuum. To be successful, in terms of meeting overall ambitions to reduce resource use and carbon emissions, these efforts should be part of a larger context such as a strategy for sustainable IT with underlying policies.

This will also help manage the tradeoffs that inevitably will occur. These are some examples of what Leadership for Change members have experienced:

Employee satisfaction

Some of the actions in this guide can negatively impact employee satisfaction in the short term. They may for instance

not like the fact that the device they get is not always new, that they need to walk a little longer to find a printer, or that the standard workplace is slim and that extras need to be ordered. Building a sustainability culture is a way of overcoming these barriers.

Costs and resources

Many of the actions have the power to reduce costs, but there is always a risk that costs emerge somewhere else. Sourcing less products and may require more internal resources for repair and support. Opting for extended warranty will mean a higher purchasing price, and to balance that the organization must make sure that the device really is kept longer and/or is recovered at end of use to take advantage of the higher residual value. These tradeoffs highlight the need for

calculating the total cost of ownership, and to have processes in place that ensure that the intended benefit is realized.

Security and service

Even though small IT devices in a technical sense can be used longer than what is often the case today, prolonging lifespan comes with certain risks and tradeoffs. Extending contract length and time of use within the organization may be hampered by software-compatibility issues that can cause security concerns. This can be addressed by putting software requirements at the time of purchase, but also by having an asset-management system with information about age and software status. Also, from a sustainability and resource perspective, the end goal is to maximize the lifespan of the product, not to prolong the first use cycle. When a product is used longer within the organization it therefore needs to be regularly maintained, and employees should be nudged to take good care of their devices.

Finally, remember that even though a strategy and policies are recommended and will facilitate the implementation of these actions, the most important thing is to get started.

Going forward

During the process of identifying the best practices for this guide, some areas that need to be addressed further emerged. The members hope to be able to return with more first-hand information on this in future updates of this document.

1

Measuring and follow up

More can be done to determine the effects of the implemented measures. Follow up against KPIs connected to lifespan and resource use is still quite immature, both in terms of direct effects on sustainability and indirect effects on for example costs.



HAVE A LIFE-CYCLE PERSPECTIVE

When applying sustainability measures it is always important to have a life-cycle perspective. For small IT products, the majority of the climate footprint occurs in the production why extending their lifespan is (almost) always the preferred option from a sustainability perspective. For other products and solutions where the use phase has a higher footprint, such as printers or servers, there may sometimes be a case for replacing older products with more energy-efficient ones. The most important thing is to make an informed decision, based on each organization's conditions.

[More info about life-cycle perspective.](#)

2

Software

Software clearly plays an important role in the lifespan of hardware, both in terms of system requirements and security; however, few members have specific requirements around software today. More dialogue between IT buying organizations and the industry, as well as support for how to formulate criteria is needed.

3

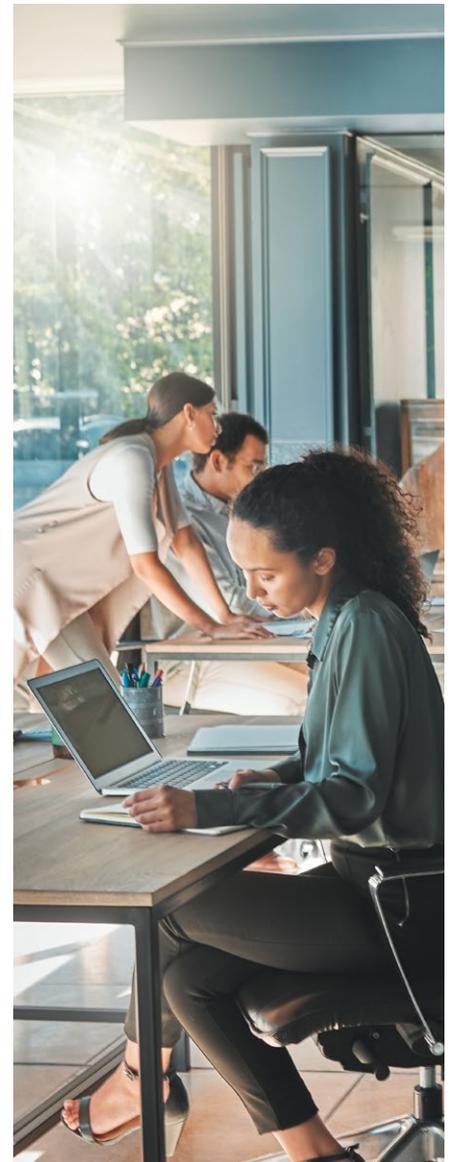
Refurbished

No members buy refurbished devices to any extent today. One member offered refurbished smartphones through their internal ordering system, but the vendor discontinued the service. Other members have included the option to buy refurbished in their contracts but never used it. The reasons are many, one being that a majority have prioritized to extend contract length as a first measure to prolong lifespan. Others are uncertain supply and security issues.

4

Batteries

Batteries is another big factor in determining the lifespan of small IT devices. Batteries generally have a shorter lifespan than the device itself and the warranty is therefore shorter. Batteries may also be hard and costly to replace, which leads to replacing the whole device. Members try to combat this by for example choosing ecolabels with extensive battery requirements and opting out of express-charging batteries, but solving this will require other steps such as increased dialogue with the industry around product design as well as implementing an internal repair-first culture.



Best practices



HOW TO USE THE BEST PRACTICES

Example of actions = concrete actions within the defined category that are carried out by one or several members with the intention to extend the lifespan of IT products.

Documented effects = examples of documented effects for the organization that one or more members have seen. Not all actions in the guide have been measured and followed up in such a way that a documented effect can be established. Please note that effects may vary among organizations depending on how the action is implemented.

Potential effects = what members hope to achieve with the implemented actions but not yet have been able to document.

Priority: Under each category the action considered to have the largest impact on lifespan and/or resource consumption is listed first.

CHALLENGE CONTRACT PERIODS/ EXTEND USE TIME

Measures aimed at extending time of use within in the organization.

Internal circulation

Example of action: Make inhouse products, such as devices and peripherals, that are no longer in use available through the internal ordering system, and nudge employees to look here first (where the products are free, and delivery is instant).

Documented effect: Cost savings, CO2 savings, happy employees and good reputation for IT.

Replace products based on use not time

Example of action: Implement/update internal policies to reflect that devices should be replaced based on need, not time. Educate relevant stakeholders, such as Service Desk to not automatically approve replacements but to have a repair-first policy.

Documented effect: The policy is recently implemented but is expected to significantly reduce the number of laptops purchased over a year.

Example of action: Keep track of how much printers are used and replace them on basis of that.

Documented effect: Up to eight years use time of printers, which in turn means that less products are procured. Resources are saved also internally thanks to fewer procurement processes.

Example of action: Use a database/asset management system to monitor use time of devices (in this case computers). As long as the software is still ok the products will be kept running.

Documented effect: No effects calculated yet as the system was recently implemented. Follow up and analysis will hopefully be available mid-2024.

Potential effect: Data on which products last longer in the organization can help save costs and prolong lifespan.



Make extended warranty default

Example of action: Always go for extended warranty and negotiate this at the point of purchase to keep costs down. If the product is recovered and resold, the warranty is passed on to the new owner.
Documented effect: Up to five-year contract periods, which in turn means that less products are procured. Resources are saved also internally thanks to fewer procurement processes.

Aim for long lasting batteries

Example of action: The standard configuration of laptops most often includes express-charging batteries with 300 charging cycles and one year warranty. Batteries can be configured to not charge as fast and reach 1,000 charging cycles (customer factory integration). In this case, the manufacturer can provide a three-year warranty.
Potential effect: Batteries need to be replaced less often which saves both resources, costs and decreases carbon emissions.

Protect by default

Example of action: Casings and screen protection are mandatory and are delivered together with the device to the employee.

Documented effect: Reduced costs and very few repair and support issues.

RECOVERY OF USED DEVICES

Measures aimed at recovering used devices for reuse or recycling.

Internal loop system

Action: Implement an automated process for activating the return of old devices when a new is ordered. Examples:

- If no product is to be returned the employee needs to explain why.
- More than one unit being registered on the same person will render a fee.

Potential effect: Fewer devices “disappear” which reduces the need for acquiring new ones and increases the number of devices that can be transferred to new users.

QUALITY

Measures aimed at prolonging lifespan by choosing more durable and longer-lasting products from the onset.

Opt for higher specifications

Example of action: Not buying the simplest devices and lowest possible capacity (RAM et.al.) to avoid being irrelevant

when new security or software demands appear.

- More memory (16GB RAM) makes users want to keep laptops longer
- Fewer models will cover the needs of the entire organization, which facilitates internal circulation
- Enterprise models have military standards which makes them more durable and robust.

Documented effect: Devices are kept longer and have a higher residual value. Fewer support issues save costs and internal resources.

REDUCE NUMBER OF PRODUCTS

These measures are not always done for a sustainability reason but can have a large impact since they contribute to reducing resource consumption and mitigate the environmental and climate burden of manufacturing.

Peripherals on demand

Example of action: Fewer peripherals are included in the standard workplace and extras are available on demand for employees who need it.
Documented effect: Cost savings, less products are procured (saves time).

High-usage products only

Example of action: Keeping track of the usage and keeping only the high-usage printers.
Documented effect: Reduced print fleet by 50 percent.

Same function – less product

Example of action: Choosing screens with built-in docking stations and cameras.
Example of action: Offering one wide screen instead of two screens.
Potential effects of above: Reduced costs and more effective internal management thanks to less equipment, material, and cables. And a cleaner desk as a bonus. (Please note that screens with built-in docking stations may be more costly to repair.)

Tips!

Change default

What unites many of the actions is that they challenge practices that are default. It's about reflecting on and questioning standard procedures to detect wasteful (resource-inefficient and carbon-emitting) practices.

What can you question from your point of view? How many peripherals employees automatically get? That onboarding workplaces always consist of new products? That everyone must have a printer nearby? That hardware is replaced at a certain interval?

Review internal policies, current

contract length and how the standard workplace is set up.

Asset management

The foundation of extending the lifespan of IT devices is good life-cycle management, and the foundation of good life-cycle management is an asset management system. A system of this kind gives your control, access to relevant data and an opportunity to know your use.

Check out ecolables

Products that carry an ecolabel (type 1 with externally verified criteria) often

have requirements that are designed to prolong the lifespan. Examples are requirements around battery charging cycles and replaceability, military standard for durability, and availability of spare parts. In that sense, choosing a certified product when new ones need to be sourced can help organizations lay the foundation for a long lifespan without having to put a lot of effort into listing and verifying criteria. It is however important to research the ecolabel market to make sure the certification includes criteria for longevity and that requirements are verified by a third party.

Members

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Assa Abloy

Chalmers Tekniska Högskola

City of Malmö

Electrolux

Elmera Group

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Granitor-gruppen

Göteborgs universitet

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H&M

Scania

SEB

Securitas

Svenska Kyrkan

Svenska Spel

Systembolaget

Södertörns Högskola

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Tetra Pak

Uppsala Municipality

Vattenfall