



Cigref

Software and hardware obsolescence

*Recommendations for organisations using
digital technology*

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EDITORIAL

Obsolescence, n.

- The state of being out of date
- Depreciation of a device or equipment before it wears out physically.

The definition of obsolescence highlights the loss of usage value, and therefore of economic value, before it has physically worn out. For our companies, digital technology is a lever for growth; a tool that serves our businesses. The economic value of digital technology is well established. The current awareness of the environmental impact of digital technology prompts questions concerning this loss of value, some of which results from the (overly) frequent renewal of hardware and software. It is our responsibility to factor in the environmental cost of equipment and to promote the environmental benefit of keeping this equipment longer!

Within Cigref member organisations, hardware or software obsolescence is a very common occurrence, and may be forced by the termination of security or support updates. The intrinsic interdependence between software obsolescence and hardware obsolescence is a major problem. Renewing equipment or updating software requires time, money and skills – and provides benefits that are not always quantifiable.

As part of this taskforce, comprising the member organisations of Cigref, we invited the [DINUM](#) and [MTE](#) government bodies to explain the different regulations and how they could help us in the fight against obsolescence. We also spoke with the Fairphone company and the HOP (Halting Programmed Obsolescence) association to provide further insight for our examination. My thanks to them for their detailed and enthusiastic help!

The subject of obsolescence is a complex subject which cannot be exclusively dealt with by user companies. Obsolescence must be considered at a communal level, by user companies and by digital suppliers (publishers and manufacturers).

We, as user companies, must question our practices and our choices. And we also want our suppliers to tackle the subject of obsolescence so that their proposals are able to meet the challenges of a subject that is a regulatory topic of central importance.

We are aware of the difficulty in striking a balance between digital innovation and reducing environmental impacts. We therefore need to work together to build sustainable digital technology.

I would like to thank all the participants of the taskforce that I have had the pleasure of leading, with the assistance of Flora Fischer.

Olivia Bertout, Digital CSR Leader, Adeo, Head of Taskforce

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OVERVIEW

Companies are increasingly faced with software and hardware obsolescence, which penalises them in terms of security, cost control, limitation of environmental impacts and preservation of resources. Following on from Cigref's work on [digital sobriety](#), a taskforce met to deal with this issue of obsolescence in more detail.

What are the keys to working with partners to extend the lifespan of hardware and software while ensuring the security of information systems?

The research carried out by this taskforce resulted in two interdependent deliverables:

1. **Internal recommendations to user companies** with action areas intended in particular for the Purchasing departments and the IT Department;
2. Commitment proposals **intended for providers of digital products and services**, providing a shared platform for study with organisations who use digital technology to fight against the phenomenon of software and hardware obsolescence.

Each of these two deliverables is accompanied by a summary sheet on the state and evolution of **regulations concerning the fight against the obsolescence of digital products and services**.

This deliverable suggests practices for internal implementation, particularly for Purchasing and IT departments. These recommendations are intended to help integrate the specific requirements of software and hardware obsolescence into the responsible digital purchasing policy and into the day-to-day work of IT departments. Finally, an analysis of costs attributable to the limitation of the lifespan of the software and hardware and of the economic gains linked to the fight against obsolescence is presented as a means of promoting confidence among clients.

Recommendations for internal use in order to reduce the phenomenon of software and hardware obsolescence

We know that digital technology represents more than **2%** of France's GHG footprint, and **70% of emissions** are focused on the **digital equipment manufacturing phase**¹. The issue of **extending the life of equipment** is crucial today. This is why, as the Practical Guide to Responsible Digital Purchasing puts it: "To reduce the environmental impact of digital technology, we must promote sustainable production, encourage eco-design of equipment and avoid rapid replacement of equipment [...] by promoting reuse and repairability."²

In addition to the influence that organisations try to exert on their stakeholders (see Deliverable 2 "Proposals for suppliers of digital products and services"), and ahead of the implementation of new regulations (see Annex Regulations), organisations can act – or are already acting – within their own sphere and with their own resources, in order to fight against the phenomena of software and hardware obsolescence.

Organisations that take these issues into account can reap great benefits: in addition **to increasing their Corporate Social Responsibility (CSR)**, the reduction of the environmental impacts of digital technology is also part of a philosophy of **cost reduction** on a large scale and can even be valued in non-financial performance statements. The act of **getting employees to buy into** this approach also has a strong added value in terms of commitment, motivation and empowerment.

This document offers a focus on three areas in the internal fight against software and hardware obsolescence in terms (a) of **responsible purchasing policy**, and (b) **of operational use** and support for the IT Department, and (c) an analysis of **economic performance**.

Here is a presentation of the main good practices identified by participants in the Cigref "Software and Hardware Obsolescence Taskforce". They are just as applicable to an IT department as to a purchasing department.

¹ http://www.senat.fr/fileadmin/Fichiers/Images/redaction_multimedia/2020/2020-Documents_pdf/20200624_Conf_presse_Dev_Dur/20200624_Conf_Dev_Dur_Infographie.pdf

² DINUM, INR, DAE, "[Practical guide to responsible digital purchasing](#)", June 2021, p.10



RESPONSIBLE DIGITAL PURCHASING

The first steps to fight against software and hardware obsolescence consist of defining a responsible digital purchasing policy (making it possible to optimise the management of IT assets, extend lifespans, promote reuse, etc.) and of investigating the practices of suppliers:

- Include and **implement new regulatory requirements as contractual clauses** (see Regulations Annex).
- **Define criteria for selecting the most committed suppliers:**
 - Choose manufacturers demonstrating a high level of repairability and longevity.
 - By being attentive in particular to the inclusion of scope 3³ in their carbon footprint.
- **Integrate criteria by type of purchase** in the specifications:
 - Durability: OS maintenance and security updates for more than 5 years, compatibility between connections and equipment.
 - Repairability: length of availability of spare parts.
 - Ecodesign and frugality of application services.
- Ensure that these criteria are **assessed in the same way as economic, technical, security, response to needs and quality of service criteria**.
- Choose products certified by **eco-labels**, ensuring the lowest environmental impact during manufacture. The [Practical guide to responsible digital purchasing](#) offers a description of eco-labels from page 25 to page 31.
- Starting from the call for tenders, ensure the **quality and end-of-life monitoring of equipment:**
 - **Ensure recycling** of equipment by verifying suppliers' WEEE mandates. The two approved eco-organisations in France are Ecologic and Ecosystem.
 - **Promote the reuse** of still functional equipment (the [ordi3.0](#) site lists these players in the reuse sector, including Emmaüs Connect and the Ateliers du Bocage).

³ I.e. emissions indirectly produced by the activities of the organisation, linked to the complete value chain



PRACTICES AND OPERATIONS AT ISD

The fight against software and hardware obsolescence also involves raising awareness and reflecting on operating practices in IT departments. Here are some examples:

With respect to software obsolescence:

- **Have access to technical skills** to ensure that applications are maintained over time.
- **Offer training in eco-design.**
- **Work with the publisher** to ensure security updates over a longer period of time.
- In development teams, **establish design standards** that promote sustainability and efficient use of resources, such as:
 - Separating the business code from the framework or the language to facilitate updates;
 - Rewriting some unmaintained libraries for security;
 - Limiting external dependencies;
 - Promoting modularity to install only features that meet customer needs.

With regard to hardware obsolescence:

- Raise awareness of the issue of digital sobriety among IT department employees so that they can implement measures such as:
 - Opt for **reconditioned** instead of new;
 - Systematically implement **preventive maintenance**: carry out technical checks before the end of the warranty in order to anticipate replacement costs;
 - Make more use of internal **reuse**.
- **Prevent cultural obsolescence by training and educating all employees:**
 - Organize repair workshops (“Do It Yourself”);
 - Set up nudge initiatives to encourage users to keep their equipment (for example through games, challenges with rewards, etc.);
 - Encourage managers to set an example.
- **Avoid “over-equipping” employees:** thanks to capacity planning, BYOD, reuse, the use of collaborative software, or even the use of multi-SIM phones.
- **Establish benchmarks** and measure the use and replacement rate of devices by division, department and BU.
- When professional use comes to an end, the IT Department can extend the life of the equipment:
 - By allowing the employee to **acquire the material once it has been depreciated**.

- By setting an **end-of-life policy which promotes reuse and then recycling**, stating the process to be followed, with guarantees and traceability (to be determined upstream of Purchases), and by creating partnerships.

Depending on the structure of the companies, the IT purchasing activity may not necessarily be an internal one. It is therefore important to ensure cooperation between the buying IT department and the order-placing purchasing department.



ECONOMIC PERFORMANCE

Lastly, the way in which we measure the economic performance of software or hardware is also an essential tool in the fight against obsolescence:

- To achieve **full and multi-criteria life cycle cost analysis** for hardware and software during the purchasing phase.
- To conduct a **real life-cycle cost analysis exercise for a completed project** in order to provide information for internal comparison.
- To quantify the **financial options** for renting or buying **reconditioned equipment**, rather than new.
- To measure **financial gains from procedures related to the functional economy**, through a vigilance regarding hidden costs (shorter equipment renewal cycle than in traditional purchases, etc.) regarding the traditional economy.
- **To weight the financial benefits** of renewals of equipment according to the human time required, the WEEE weighting (CSR impact, carbon footprint) and the business benefit.
- To promote the fight against obsolescence through the **extra-financial performance statement** (environmental impact of digital goods and services, social impact of reuse channels, etc.).

Of course, these recommendations must be tailored according to the context of individual organisations and their internal CSR strategies.

The goal of all of these recommendations is to ensure better consideration of the environmental impact of software and hardware for a sustainable digital transition.

APPENDICES

Status and evolution of regulations in the fight against software and hardware obsolescence

This appendix gives the main references to existing or pending French legal texts concerning the fight against software and hardware obsolescence. The current evolution of legislation must be seized upon as an opportunity to change behaviour and practices today. Certain bills, including the Chaize bill, were undergoing review at the time of publication of this document. It is therefore important to note the publication date of this deliverable (October 2021) and refer later to the final published text.

1. IDENTIFICATION OF OBSOLESCENCE

1.1. Environmental Code

Although not explicitly mentioned, the theme of planned obsolescence already underpins [art. L. 110-1-1 of the Environmental Code](#) through the concept of the **circular economy**, with its “aim of achieving a neutral ecological footprint within the framework of respect for planetary limits and transcending a linear economic model consisting of extracting, manufacturing, consuming and throwing away, calling for a sober and responsible consumption of natural resources and primary raw materials.” This article stipulates the need for an “**extension of products’ life cycles.**”

1.2. Consumer Code

Planned obsolescence was defined in 2015 in [Article L213-4-1 of the Consumer Code](#) via “all the techniques by which a producer aims to deliberately reduce the lifespan of a product in order to increase its replacement rate.” **Planned obsolescence is punishable by two years’ imprisonment and a fine of €300,000.**

The current problem is that it is still difficult to identify the offence of planned obsolescence. One of the goals of parliamentarians today is to make it easier to incorporate into court decisions (indeed, article 6 of the Chaize bill wishes to make the identification of the offence of obsolescence more effective).

2. RECENT MECHANISMS

2.1. Law of 10 February 2020 relating to the fight against waste and the circular economy, known as the “AGEC Law”

The AGEC law includes several provisions aimed at extending the lifespan of products:

- **Article 16:** the first flagship provision concerns **the reparability index (RI)**:
 - Since 1st January 2021, a reparability index (a score out of 10) has been mandatory for 5 electrical and electronic products, including smartphones and laptops, to inform consumers about the extent to which the products can be repaired.
 - As of 1st January 2024, the durability index will replace or supplement the reparability index, and will focus on the reliability and robustness of equipment.
- **Article 19 & article 22:** these two articles introduce new requirements concerning the **extension of the lifespan of digital equipment**:
 - Art. 19: Obligation to provide spare parts for 5 years for certain equipment, including small computer and telecommunications equipment, screens and monitors.
 - Art. 22: Extension of the legal guarantee of conformity by 6 months for devices that have been repaired under the legal guarantee of conformity (for a minimum initial period of 2 years for digital products).
- **Article 27:** this article focuses on the **fight against software obsolescence**:
 - Manufacturers and sellers of goods incorporating digital elements shall provide information on the period of time during which updates to the software supplied at the time of purchase of the goods remain compatible with the normal use of the device.
 - Delivery of a [government report to Parliament](#) on the lifespan of digital and connected devices, on software obsolescence and on options for extending the lifespan of the equipment concerned.
- **Article 55:** from 1st January 2021, public administrations, when making their purchases, must favour the use of software whose design makes it possible to limit the energy consumption associated with their use.
- **Article 58:** from 1st January 2021, buyers from the State and local authorities must acquire goods resulting from re-use or reuse or containing recycled materials, in proportions set at between 20% and 100%, depending on the type of product.

Some of the themes of the AGEC law are included in the Senate bill known as the “Chaize” bill.

2.2. Provisions of the “Chaize” bill aimed at combating planned obsolescence

This is a bill passed in the Senate on 12 January 2021 and adopted at first reading on June 10 in the National Assembly with modifications. This is the first bill to focus exclusively on the environmental impacts of digital technology. As the articles have not been finalised at the time of writing this deliverable, only a summary of the main areas of this Chaize bill is provided below. It is advisable to follow changes in its stages until the law is enacted.

The various chapters of this bill include several notable provisions:

1. The provision on **the awareness** of digital users of its environmental impact: this is, for example, a question of modifying the Education Code by making training in ecodesign of digital services and digital sobriety compulsory in engineering courses (art. 2).
2. The second provision on the **restriction of renewals of IT equipment**: among other things, this is a question of integrating software obsolescence into the definition of planned obsolescence as defined in article L213-4-1 of the Consumer Code (art. 7), but also of giving consumers the ability to refuse software updates or to uninstall them if they are having a negative impact on their access to the digital service (art. 10).
3. The third provision on the **promotion of ecologically virtuous digital practices**; e.g. by promoting the declaration of design techniques in the CSR declarations of companies providing digital content (art. 17), by defining a general ecodesign framework (art. 16), or by obliging telecommunications operators to publish key ecodesign indicators for their digital products and services (art. 23).
4. The fourth provision concerns the **reduction in energy consumption of data centres and networks** by requiring data centre owners and network operators to subscribe to commitments to reduce their environmental impacts (art. 21).

With this bill, certain articles of the Environmental Code, the Consumer Code and the Intellectual Property Code have been amended through the integration of a digital component⁴.

⁴ <http://www.senat.fr/tableau-historique/ppl20-027.html>



Achieving digital success to help promote the economic growth and competitiveness of its members, who are major French corporations and public administrations, and users of digital solutions and services

Cigref is a network of major French corporations and public administrations set up in order to develop its members' ability to acquire and master digital technology. It is a unifying player in the digital society, thanks to its high-quality thinking and the extent to which it represents its members. Cigref is a not-for-profit body in accordance with the French law of 1901, created in 1970. To achieve its mission, Cigref counts on three business units, which make it unique.

Belonging

Cigref speaks with one voice on behalf of major French corporations and public administrations on the subject of digital technology. Its members share their experiences of the use of technology in working groups in order to elicit best practices.

Intelligence

Cigref takes part in group discussions of the economic and societal issues raised by information technologies. Founded nearly 50 years ago, making it one of the oldest digital associations in France, it draws its legitimacy from both its history and its understanding of technical topics, giving it a solid platform of skills and know-how, the foundation stones of digital technology.

Influence

Cigref ensures that its member organisations' legitimate interests are known and respected. As an independent forum in which practitioners and actors can discuss and create, it is a benchmark recognised by its whole ecosystem.

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