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Digital Sustainability Guidelines

This document proposes a series of ideas and practical suggestions (tips) to be taken into account in the context of activities (both professional and non-professional) in order to reduce the environmental impact of our digital activities and to improve the digital sustainability of our choices and behaviours. The guidelines have been developed by the Digital Sustainability Working Group and are organised into four thematic sections:

1. Email: efficient use of the most widely used tool in everyday communications
2. Unified Communication: use of tools and platforms to integrate messaging, video calls, document sharing and real-time collaboration
3. Cloud Storage: optimised management of available storage space
4. Digital devices: device selection, extension of lifecycle, energy saving

At the beginning of the document there is a summary table of the tips contained in each thematic section; within the following sections, each tip is described in detail.

CLASSIFICATION OF THE TIPS CONTAINED IN THE GUIDELINES

CATEGORY	ACTION
Email	Include only the necessary recipients in communications (limit the use of cc and bcc)
	Use mailing lists where possible instead of sending individual emails
	Reduce the number of attachments
	Compress attachments to reduce their size
	Where possible, send links to files instead of attaching them (e.g. link to a document on OneDrive)
	Delete unnecessary messages, reducing the occupied storage space

Email	Archive messages only if strictly necessary
	Empty the trash and spam folder
	Unsubscribe from newsletters that are no longer of interest
	Set up automatic replies in case of prolonged absences
	Write concise and clear emails
	Use folders to organize e-mail
Unified Comunication	Reduce the use of video when not necessary (reducing bandwidth and energy consumption)
	Optimise the duration of virtual meetings by avoiding prolonged and unnecessary sessions
	Use chat and instant messaging for short and urgent communications
	Share files by prioritising links rather than attachments
	Avoid sending duplicate messages through multiple systems (chat and email)
	Record meetings only when strictly necessary
	Use virtual backgrounds with limited size to avoid graphic processing
	Encourage mindful participation (invite only strictly necessary participants)
Cloud Storage	Delete unnecessary and duplicate files
	Archive only strictly necessary files
	Compress files to reduce their size before uploading them to the cloud
	Configure local synchronisation only for strictly necessary files
	Share files by prioritising access links rather than file copies
	Set efficient file versioning policies, avoiding multiple versions when not necessary
	Set up incremental and differential backup mechanisms instead of full backups
Digital Devices	Choose high-quality and durable devices
	Carry out periodic maintenance of devices to extend their lifespan
	Optimise battery life by avoiding full discharge and recharge cycles

Digital Devices	Perform software updates regularly
	Set energy-saving modes
	Turn off devices when not in use, avoiding standby mode for prolonged periods
	Reduce screen brightness
	Close unused applications to avoid energy consumption
	Prefer repairing faulty devices rather than replacing them
	Dispose of devices properly at the end of their lifecycle
	Choose accessories made from sustainable materials
	Prefer dark mode where possible
	Disable any unused peripherals (Wi-Fi / Bluetooth)

Tips for e-mail

Include only the necessary recipients in communications (limit the use of cc and bcc)

In email communications, it is essential to include only recipients who have a real interest in the content of the message. This approach not only reduces unnecessary traffic, but also improves the efficiency of digital communications. Limiting the use of the CC (carbon copy) and BCC (blind carbon copy) fields is essential to prevent emails from reaching people who do not need to be informed, thus reducing server storage usage and overall energy consumption. Furthermore, limiting the use of CC and BCC can help protect recipients' privacy by avoiding the unnecessary sharing of email addresses. This is particularly important in corporate contexts, where information confidentiality is crucial. Using CC and BCC fields only when strictly necessary helps keep communications more organised and focused, improving the quality of digital interactions and reducing the risk of information overload.

Use mailing lists where possible instead of sending individual emails

The use of mailing lists or distribution groups makes it possible to optimise the management of communications to multiple recipients, avoiding the sending of individual emails. This approach not only reduces the overall number of emails in circulation, but also decreases the use of network resources, improving system efficiency. Furthermore, mailing lists allow for better organisation of both internal and external communication. For example, it is possible to create specific distribution groups for different departments or project teams, ensuring that relevant information reaches only the appropriate recipients. This not only improves the clarity and consistency of communications, but also reduces the

risk of information overload for recipients who are not directly involved.

The use of mailing lists also facilitates the management of replies and discussions by centralising communications in a single thread. This makes it easier for group members to follow conversations and retrieve important information, improving collaboration and operational efficiency.

Reduce the number of attachments

It is advisable to minimise the sending of attachments, as they occupy a significant amount of space on email servers and contribute to increased bandwidth consumption. Opting for alternatives such as links to documents shared in the cloud can improve the overall efficiency of communications and reduce the associated environmental impact.

Compress attachments to reduce their size

Before sending files as attachments, it is useful to compress them to reduce their size. This helps decrease transfer time and network resource consumption, improving the efficiency of email. Compressed files take up less space and require less energy to be stored and transmitted. File compression can be carried out using native tools available in operating systems, such as the compression function in Windows, or with third-party software such as 7-Zip or WinRAR. These tools offer various compression options and can handle different file formats, making the process simple and accessible to everyone.

Where possible, send links to files instead of attaching them (e.g. link to a document on OneDrive)

Sending links to documents hosted on cloud platforms, instead of attaching large files, makes it possible to reduce bandwidth usage and the space occupied on email servers. Furthermore, the use of links to documents shared in the cloud allows files to be kept up to date in real time, improving collaboration and reducing the need to send multiple versions of the same document. This approach not only reduces server storage usage, but also facilitates access to documents for all recipients, regardless of their geographical location. The use of cloud storage platforms such as OneDrive and Google Drive represents a valid alternative to sending large attachments.

Delete unnecessary messages, reducing the occupied storage space

Regularly deleting unnecessary email messages helps reduce the space occupied on servers, improving email management speed and reducing energy impact. Deleting obsolete or irrelevant emails also helps keep the inbox more organised. A periodic approach to cleaning up unnecessary emails improves efficiency and has a positive impact on the environment.

Archive messages only if strictly necessary

It is advisable to archive only emails that are actually useful, avoiding the accumulation of unnecessary messages. Archiving non-essential emails can lead to excessive consumption of space and resources, both on email servers and on personal devices. Efficient management of email archiving is an important process for maintaining proper digital management.

Empty the trash and spam folder

Regularly emptying the trash and spam folders helps free up space on servers and improves email management. These messages, if not deleted, continue to occupy resources even though they are no longer needed. Enabling automatic deletion options for messages in these folders can further optimise the process. Lighter and cleaner inboxes require fewer resources to be managed.

Unsubscribe from newsletters that are no longer of interest

Newsletters that are no longer relevant can quickly accumulate in the inbox, unnecessarily occupying space and resources. Unsubscribing from newsletters that are no longer of interest helps reduce the number of emails received, improving time management and digital sustainability. Timely and regular unsubscription is therefore a recommended practice for maintaining an efficient and well-organised inbox.

Set up automatic replies in case of prolonged absences

Setting up an automatic reply in case of prolonged absences reduces the need for repeated contact from colleagues or clients, optimising communication management. This tool prevents the sending of duplicate messages and reduces unnecessary email traffic. Automatic replies represent a useful tool for managing communication during absences. A guide to setting them up can be found here: configure automatic replies in Gmail and Outlook.

Write concise and clear emails

Writing concise and clear emails significantly helps reduce reading and comprehension time, improving communication efficiency. More direct and well-structured communication decreases the number of unnecessary messages and facilitates quicker and more targeted responses. Short emails not only optimise time and human resources, but also reduce the load on servers and the environmental impact associated with the transmission and storage of information. Adopting this approach helps maintain a more manageable inbox and contributes to greater digital sustainability.

Use folders to organise email

Organising email through the use of folders makes it possible to manage communications more effectively and to quickly access important messages. Creating and maintaining a well-defined folder structure helps to divide emails into specific categories, facilitating the search and retrieval of the necessary information. This approach improves operational efficiency by reducing the time spent searching for messages and, consequently, lowering the energy consumption associated with email

management. An organised folder system contributes not only to a smoother workflow, but also to a lower demand for resources, promoting greater digital sustainability.

Tips for Unified Comunication

Reduce the use of video when not necessary (reducing bandwidth and energy consumption)

Reducing the use of video, especially in non-essential meetings or communications, can bring significant benefits in terms of both bandwidth savings and reduced energy consumption. Prolonged videoconferences, which are particularly common in remote working contexts, can have a considerable environmental impact due to the high consumption of bandwidth and the energy required to maintain connections and devices. Limiting the use of video to situations where it is truly necessary helps to minimise the load on servers and network infrastructures, promoting more sustainable management of digital resources. This approach not only improves communication efficiency, but also supports a broader commitment to environmentally responsible business practices.

Optimise the duration of virtual meetings by avoiding prolonged and unnecessary sessions

Planning virtual meetings with a well-defined duration and clear objectives helps avoid prolonged and unproductive sessions, thereby optimising energy consumption and improving productivity. Setting a specific time for the meeting and clearly defining the topics to be addressed helps maintain focus and ensures that all participants remain aligned with the established objectives. This approach not only improves the efficiency of discussions, but also supports a more sustainable use of digital resources by reducing the load on servers and minimising the environmental impact associated with videoconferencing. In this way, it is possible to achieve concrete results without compromising environmental well-being. Further guidance on how to effectively manage virtual meetings is available on Harvard Business Publishing.

Use chat and instant messaging for short and urgent communications

To manage quick and urgent communications, it is preferable to use chat or instant messaging tools rather than email. These tools are designed to facilitate timely responses and real-time information exchange, reducing the risk of delays and improving communication efficiency. Using instant messaging for urgent matters helps keep email less congested and prevents overloading email servers. Moreover, this approach can contribute to more sustainable management of digital resources by minimising the volume of messages in inboxes and optimising the use of network infrastructure.

Share files by prioritising links rather than attachments

When it is necessary to share files, it is preferable to send links to documents hosted on cloud platforms rather than attaching files directly to emails. This method significantly reduces the amount of data transmitted and stored in email inboxes, contributing to more efficient management of digital resources.

By using cloud services for document sharing, it is possible to avoid overloading emails and mail servers, thereby reducing bandwidth consumption and improving system sustainability. Moreover, this approach facilitates access to up-to-date and centralised documents, optimising collaboration and ensuring greater efficiency in file management.

Avoid sending duplicate messages through multiple systems (chat and email)

Sending duplicate messages through different channels, such as email and chat, can cause confusion and overload communication systems. Using multiple channels for the same message can not only create disorientation among recipients, but also increase the volume of digital traffic, affecting the efficiency and clarity of communications. To reduce unnecessary traffic and improve communication management, it is preferable to choose a single channel for sending messages. This approach simplifies communication, reduces the risk of lost or overlapping information, and contributes to more sustainable management of digital resources.

Record meetings only when strictly necessary

Recording virtual meetings involves intensive use of storage space and energy resources, as video files can be large and require significant resources for storage and management. To minimise the environmental impact associated with file storage, it is advisable to record meetings only when strictly necessary. Limiting recording to essential events or specific purposes reduces resource consumption and helps maintain more sustainable data management. Furthermore, practices such as file compression and storage on efficient platforms can be adopted to further optimise the use of digital resources.

Use virtual backgrounds with limited size to avoid graphic processing

High-quality virtual backgrounds in videoconferences can require significant use of graphical and network resources, increasing the load on devices and affecting the energy efficiency of meetings. To reduce environmental impact and improve performance, it is advisable to use backgrounds with limited size and less detail. Opting for low-resolution images or plain backgrounds helps reduce bandwidth consumption and CPU load, promoting more sustainable management of resources during videoconferences. This approach not only contributes to a smoother and less resource-intensive meeting experience, but also supports greater overall energy efficiency.

Encourage mindful participation (invite only strictly necessary participants)

Inviting only strictly necessary participants to virtual meetings is a practice that significantly contributes to reducing energy consumption and improving the efficiency of discussions. Limiting participation to individuals with a direct interest or an active role in the topic helps keep meetings more focused and productive. This approach not only minimises the load on servers and networks, but also allows for optimisation of participants' device resources. Focusing on a limited number of participants makes it possible to better manage time and resources, ensuring that each meeting is truly effective and targeted.

Tips for Cloud Storage

Delete unnecessary and duplicate files

Efficient management of digital storage space involves the regular deletion of unnecessary or duplicate files. This practice is essential to reduce resource consumption on servers and devices, contributing to more sustainable management of digital storage. Freeing up space from superfluous files not only improves system performance and facilitates access to relevant data, but also reduces the environmental impact associated with the storage and management of information. Optimising the use of storage space contributes to lower energy demand for maintaining and cooling servers, thereby promoting greater digital sustainability.

Archive only strictly necessary files

It is advisable to archive only essential files, avoiding the accumulation of unnecessary data. Adopting an optimal use of storage space not only helps keep systems organised and easy to manage, but also contributes to reducing energy consumption. Keeping only the necessary data decreases the need for additional storage devices and reduces the load on servers, promoting greater digital sustainability. This approach fosters more efficient resource management and supports more environmentally friendly practices in the storage and processing of information.

Compress files to reduce their size before uploading them to the cloud

Compressing files before uploading them to cloud platforms is a useful practice to reduce the amount of space and bandwidth required for data storage and transfer. This operation improves storage efficiency, allowing fewer resources to be used to retain information and reducing the costs associated with storage. Moreover, file compression helps decrease the environmental impact related to data management, as it reduces the load on servers and the energy consumption required to store and transmit files. Adopting this strategy supports more sustainable and optimised management of digital resources.

Configure local synchronisation only for strictly necessary files

Configuring automatic local file synchronisation only for strictly necessary documents is an effective strategy to optimise the use of resources. Limiting synchronisation to essential files reduces bandwidth consumption and disk space usage, avoiding the synchronisation of superfluous data that could burden the system. This approach not only improves operational efficiency and document access speed, but also contributes to more sustainable management of digital resources. Maintaining control over synchronised files helps reduce the environmental impact associated with data management and storage, promoting more environmentally friendly and responsible practices.

Share files by prioritising access links rather than file copies

To avoid creating multiple copies of the same file, it is advisable to share access links to documents hosted on cloud platforms rather than sending multiple copies. This method reduces resource consumption and prevents data duplication, as documents remain centralised and updated in a single

location. By using links, access and file management are simplified, ensuring that all collaborators work on the same version of the document. Moreover, this practice helps minimise the environmental impact associated with data storage and transmission, promoting a more efficient and sustainable use of digital resources.

Set efficient file versioning policies, avoiding multiple versions when not necessary

Implementing versioning policies that limit the number of versions saved for each file is an effective practice for reducing storage space usage and improving overall system efficiency. Keeping only the versions that are truly necessary avoids the excessive accumulation of historical files that can occupy valuable space and slow down data access. This strategy not only optimises the use of storage resources, but also simplifies document management, making it easier to retrieve updated and relevant versions. Moreover, reducing the number of stored versions contributes to lower demand on server resources and to more sustainable management of digital information.

Set up incremental and differential backup mechanisms instead of full backups

Incremental or differential backup makes it possible to create backup copies by saving only the files that have been modified since the last backup, significantly reducing space consumption compared to full backups. This method not only improves storage efficiency, but also helps reduce the energy impact associated with the creation and management of backups. By performing lighter and more targeted backups, the use of storage resources is optimised and the load on backup systems and servers is minimised. As a result, a more sustainable and less resource-intensive backup solution is achieved in terms of both energy and storage space.

Tips for Digital Devices

Choose high-quality and durable devices

Investing in high-quality devices with a longer lifespan is an effective strategy to reduce the need for frequent replacements and disposal. More durable devices result in less frequent purchases and a reduction in the volume of electronic waste, thereby helping to minimise the environmental impact associated with the production and lifecycle of technological equipment. Using high-quality products not only ensures greater reliability and superior performance, but also promotes more sustainable resource management by reducing the overall ecological footprint and encouraging more responsible practices in the use of technology.

Carry out periodic maintenance of devices to extend their lifespan

Performing regular maintenance on electronic devices, including activities such as cleaning fans, replacing batteries and updating software, significantly contributes to extending their useful life. Proper maintenance prevents issues that could reduce performance and accelerate device deterioration. By extending the lifespan of products, the frequency of replacements and disposal is reduced, thereby

decreasing the environmental impact associated with the lifecycle of technological equipment. Moreover, correct maintenance helps keep devices efficient, optimising their operation and contributing to more sustainable management of electronic resources.

Optimise battery life by avoiding full discharge and recharge cycles

Avoiding fully discharging and recharging batteries, especially in electronic devices, helps extend their useful life and reduce premature wear. Lithium-ion batteries, commonly used in many electronic devices, benefit from partial charge cycles rather than full discharge and recharge cycles. This approach not only improves battery lifespan, but also reduces the frequency of necessary replacements, thereby decreasing the environmental impact associated with the production and disposal of batteries. Adopting more efficient battery management practices contributes to lower resource demand and more sustainable management of technological devices.

Perform software updates regularly

Performing regular software updates is essential to ensure that devices operate optimally, improving both energy efficiency and security. Software updates often include optimisations that reduce resource consumption and improve energy management, contributing to more efficient device operation. In addition, updated software versions fix security vulnerabilities, protecting devices from potential threats. Keeping software up to date not only ensures better performance, but also reduces energy consumption and the overall environmental impact, supporting more sustainable management of technological resources.

Set energy-saving modes

Activating energy-saving modes on electronic devices, such as computers and smartphones, is an effective strategy for reducing energy consumption during periods of inactivity or reduced use. These modes optimise the use of device resources by limiting screen brightness, reducing processor activity and disabling non-essential functions when the device is not in use. Implementing these settings helps improve the overall efficiency of equipment, extending battery life and reducing the environmental impact associated with energy consumption. This approach not only helps save energy, but also supports more sustainable management of technological resources.

Turn off devices when not in use, avoiding standby mode for prolonged periods

Completely turning off electronic devices when they are not in use, rather than leaving them in standby mode, contributes to significant energy savings and longer component lifespan. Even when devices are in standby, they continue to consume energy to maintain the sleep mode and perform background activities. Fully turning off devices eliminates this residual consumption and reduces the environmental impact associated with prolonged energy use. Moreover, regularly turning off devices can help extend the useful life of electronic components by preventing deterioration caused by continuous, even if limited, use. This approach promotes more sustainable management of technological resources and contributes to greater overall energy efficiency.

Reduce screen brightness

Reducing the brightness of computer and smartphone screens is an effective practice for saving energy and extending battery life. Lowering brightness not only reduces the device's energy consumption, but also contributes to more sustainable use of resources. Moreover, appropriate brightness can improve visual comfort and reduce eye strain, especially during prolonged use. Adjusting brightness according to environmental conditions and personal needs optimises the visual experience and supports more efficient and healthy use of digital technologies.

Close unused applications to avoid energy consumption

Closing unused applications on computers and mobile devices is an important practice for reducing energy consumption and improving system efficiency. Applications running in the background can continue to use processor and memory resources, increasing workload and reducing battery life. Keeping only the necessary applications active not only helps save energy, but also optimises device performance, extending battery life and improving overall system efficiency. This practice contributes to more sustainable management of technological resources and to a smoother and more responsive user experience.

Prefer repairing faulty devices rather than replacing them

Repairing faulty or damaged electronic devices, rather than replacing them with new ones, is an effective strategy for reducing electronic waste and minimising the environmental impact of producing new devices. Repairs make it possible to extend the useful life of existing devices, avoiding the consumption of resources and the pollution associated with the production and disposal of new equipment. Moreover, repairing rather than replacing contributes to more sustainable management of technological resources, promoting a culture of durability and environmental responsibility. This practice reduces not only the direct environmental impact related to the production of new devices, but also the burden on electronic waste disposal systems, supporting a more ecological and responsible lifecycle for technology. The iFixit website provides instructions, manuals and tips for repairing devices and technologies used in everyday life.

Dispose of devices properly at the end of their lifecycle

Proper disposal of electronic devices at the end of their lifecycle is essential to prevent environmental contamination caused by hazardous materials present in many technological devices. Obsolete or damaged electronic devices often contain harmful chemicals, such as lead, mercury and cadmium, which can be dangerous if not properly managed. Recycling devices makes it possible to recover valuable materials, such as rare metals and reusable components, reducing the need to extract and process new resources. This process not only decreases the environmental impact related to disposal, but also supports more sustainable management of technological resources, promoting a circular economy and reducing the volume of electronic waste.

Choose accessories made from sustainable materials

Preferring technological accessories made from recyclable materials or sourced from sustainable origins is a choice that significantly contributes to reducing environmental impact. These products are designed

not only to minimise the use of non-renewable resources, but also to be more durable and less harmful to the environment compared to their traditional counterparts. Recyclable and sustainable materials often reduce the need to produce new materials and decrease the waste generated at the end of the product's lifecycle. Moreover, choosing eco-friendly accessories can encourage the adoption of more responsible and sustainable production practices, contributing to more conscious management of technological resources and promoting a more sustainable future for the industry.

Prefer dark mode where possible

Activating dark mode on devices and applications can help reduce energy consumption, especially on OLED screens. On these types of displays, black pixels are turned off or consume less energy than coloured pixels, so displaying dark colours requires less energy. This not only reduces battery consumption, but can also extend the device's battery life. Moreover, dark mode can improve visual comfort by reducing eye strain during prolonged use, especially in low-light environments. This simple adjustment not only supports greater energy efficiency, but also provides a more comfortable and less tiring visual experience.

Disable any unused peripherals (Wi-Fi / Bluetooth)

Disabling peripherals such as Wi-Fi, Bluetooth or GPS when they are not in use is an effective practice for saving energy and extending battery life, especially on mobile devices. These functions, if left active, can consume a significant amount of energy even when they are not actually being used. By disabling these peripherals when they are not needed, the energy load on the device is reduced, optimising battery usage and improving overall efficiency. This simple action not only contributes to more sustainable use of energy resources, but also ensures that the device remains operational for longer periods without the need for frequent recharging.