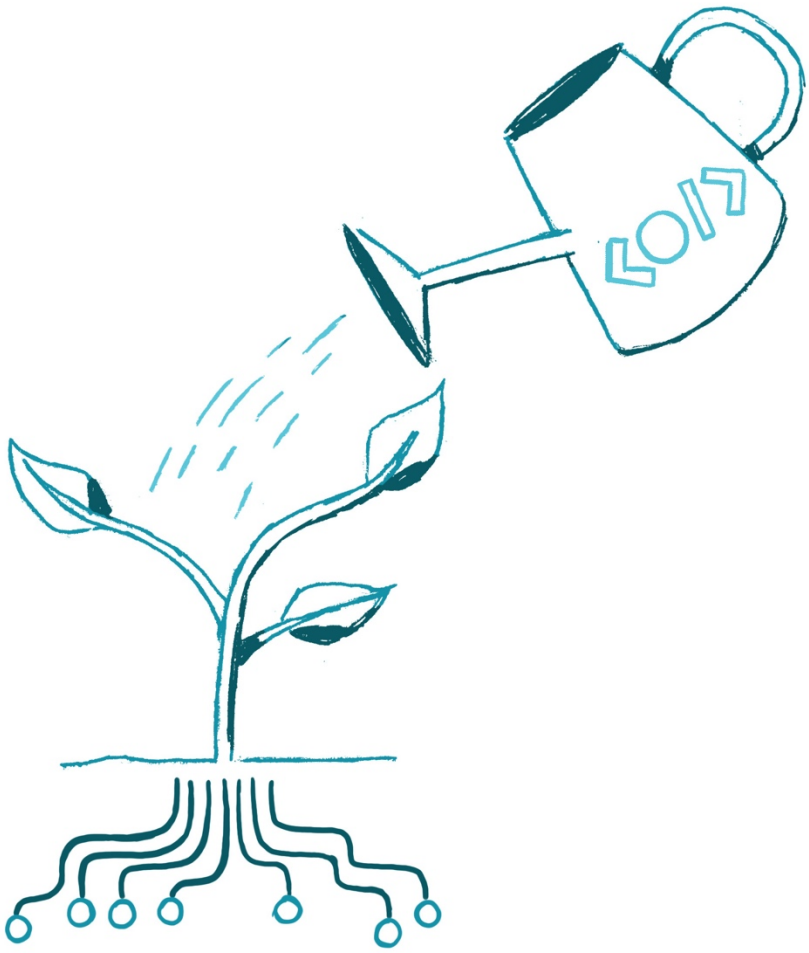
DIGITAL FOR PLANET

RE-THINK YOUR DIGITAL HABITS



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RE-THINK YOUR DIGITAL HABITS

Every day we send emails, we exchange messages, we post videos and pictures, we search the Internet, we stream series, music and movies, and we often store data, pictures and videos in the cloud. By using an increasing number of devices (laptops, phones, tablets, gaming consoles, smart TVs, routers, servers, data centers, telco devices, etc.) and applications, the consumption of energy and non-renewable resources is dramatically increasing.

The Information Communications and Technology (ICT) industry, which delivers Internet, video, voice, and other digital services, produces more than 830 million tons of carbon dioxide annually. That's about 4% of global CO_2 emissions.

Becoming aware of the impact our digital behavior can have on the environment is the first step to changing our digital habits. Greener digital habits can contribute to the sustainable development of our society, respecting the boundaries of Earth's limited resources, while preserving ecosystems for the benefit of all of humanity. Major coordinated policies and actions must be taken by governments and public authorities, as well as by private corporations to ensure proper instruments are adopted to enable real and lasting change. **We need substantial investments, policies and regulations, as well as fiscal incentives and education**. The European Commission has made this a major priority with the European Green Deal[1] in line with the United Nations 2030 Agenda for Sustainable Development[2] and other multilateral environmental agreements.

At the same time, **we need each individual to become part of the change** and contribute to a green transition of our society. Improved digital habits such as **conscious connectivity and economy of data** can have a significant positive impact, especially when enforced at all levels, from private to business contexts.

So, let's start today by rethinking our digital habits and reducing our carbon footprint!

[1] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[2] In particular SDGs 6, 7, 11, 12, 13, 14 and 15 - see https://sdgs.un.org/goals

TECHNOLOGY DRIVES ELECTRICITY DEMANDS

- Today, the ICT sector is responsible for 4% of the global CO_2 emissions. This is expected to go up to 5.5% by end of 2025, with the ICT sector accounting for 20% of global electricity demand[3]. Trends indicate that by 2021 there will be 25 billion "connected things" globally[4].
- ICT accounts for a significant share of household electricity consumption. Monitoring studies suggest that computing and consumer electronics together consume about 35% of non-heating-related electricity[5]. This will certainly be higher in 2020, in light of the COVID19 pandemic effects.

TECHNOLOGY IS DAMAGING THE ENVIRONMENT

- Mining rare-earth minerals and raw materials for the manufacturing of ICT devices and infrastructures destroys natural ecosystems.
- E-waste is the fastest growing form of waste with 53.6 million tonnes in 2019 alone (!)

TECHNOLOGY IS CREATING OVERCONSUMPTION

- The current tech-culture of disposability promotes a 'replace' rather than 'repair' approach - consumerism vs circularity.
- Software development vs. hardware upgrades - new (versions of) apps are not compatible with existing devices which have built-in obsolescence.

[3] https://www.sciencedirect.com/science/article/pii/S2214629618301051
[4] https://www.raconteur.net/sustainability/green-tech-carbon-emissions/
[5] https://www.sciencedirect.com/science/article/pii/S2214629618301051

OUR ONLINE BEHAVIOUR

Data traffic is increasing tremendously (+25% on average a year), corresponding to 55% of the annual energy consumption of the whole ICT sector. In 2020, due to the COVID19 pandemic Internet traffic is up by 25% to 30% resulting in an enormous growth of energy consumption.

20 emails a day per user over the course of a year, create the same amount of CO_2 emissions as a car traveling at 1,000 km. Every hour, more than twelve billion emails are sent, representing more than 4,000 tonnes of oil.
Online search comes at a cost to our planet. In processing 3.5 billion searches a day, Google accounts for about 40% of the Internet's carbon footprint.

Here are some tips about how you can reduce your energy consumption in a very concrete and simple way.

- **Download rather than stream and drop quality if possible.** Video streaming accounts for the biggest data volumes sent over the Internet. In 2018, online video traffic was responsible for more than 300 million tonnes of CO_2 emissions, equivalent to the total annual emissions released by a country the size of Spain.
  - Download the media file on your hard drive whenever possible, to avoid overconsumption of video streaming.
  - Choose a resolution that is sufficient for your screen/monitor.
- **Reduce the number of Google searches:** It is estimated that one Google search consumes the same amount of energy as turning on a 60W light bulb for about 17 seconds[6]. Bookmark the web pages you visit recurrently, instead of browsing for them each time.

[6] https://business.directenergy.com/blog/2017/november/powering-a-google-search

- **Switch to more socially conscious and sustainable search engines**[7]**.** Each search has a cost in terms of energy consumption. Switch to more sustainable search engines such as:
  - Ecosia *(https://www.ecosia.org)*
  - Lilo *(https://www.lilo.org)*
  - Ecogine *(https://ecogine.org)*
  - YouCare *(https://youcare.world)*
  - GEXSI *(https://gexsi.com/en)*

- **Every email uses energy**[8]**:** The average email is responsible for releasing an estimated average of 40 grams of CO_2 into the atmosphere (depending on the email size).
  - Search and destroy: Once a month, scan your inbox for old, unnecessary emails that you can delete. Pay particular attention to those with bulky attachments.
  - Take out the trash: Empty your Junk e-mail folder regularly. Some email programs do this automatically. Check your settings and choose a shorter storage period.
  - Manage your subscriptions: Reassess your newsletter subscriptions and keep only those you actually read. It might be time to unsubscribe from some of them - also check your Spam folder.
  - Avoid sending unnecessary emails and avoid sending emails to many people when not strictly necessary.
    - Unactionable one or two word pleasantries such as 'thank you' and 'thanks' to the list of the most regularly sent unnecessary emails.
    - Each UK adult sending one less 'thank you' email a day, would save over 16,433 tonnes of carbon a year - the same as 81,1522 flights from the UK to Madrid or taking 3,3343 diesel cars off the road.[9]

[7] https://www.searchenginejournal.com/alternative-search-engines-social-good/
[8] https://en.reset.org/blog/save-planet-clean-your-inbox-12242015
[9] https://www.ovoenergy.com/ovo-newsroom/press-releases/2019/november/think-before-you-thank-if-every-brit-sent-one-less-thank-you-email-a-day-we-would-save-16433-tonnes-of-carbon-a-year-the-same-as-81152-flights-to-madrid.html

- **Choose a green email provider:** There are now a number of email services that use 100% green electricity, including Posteo.de, Mailbox.org, Runbox and Tutanota, to name just a few. They also have an added bonus - they're free from advertising, meaning they protect users' privacy and don't track you online or sell your data to 3rd parties.

- **Share documents and photos:** Grant access to shared documents rather than sending as attachments. Share photos on the cloud rather than sending duplicate versions by email or SMS.

- **Turn off social media notifications:** If you receive notification emails from social networks, deactivate them unless you really need them. Most of the time, they just duplicate information you already receive directly through the network's website or app.

- **Switch off and disconnect on a regular basis**. Some digital detox is good for your mind and for our planet!

BE MINDFUL OF INTERNET TRAFFIC!

Sending many e-mails a day, making calls on WhatsApp, uploading photos to the cloud, watching even short viral clips on social media or your favourite series in streaming is just part of the digital daily life for most of us. For each individual, it may be "just one picture" or "just a few minutes of video," but, taken together, our collective Internet traffic has a tremendous environmental impact.

THE POLLUTING IMPACT OF OUR DEVICES

Our mobiles, computers, laptops, and other gadgets rely on energy to operate all the time. The electricity consumed by digital devices and infrastructures is growing faster (at 7% per year) than the global electricity demand itself (at 3% per year). The main sources consuming maximum energy are networks (36%), data centers (30%) and devices (34%).[10]
The environmental impact of devices relates not only to their energy consumption while in use. From the mining of raw materials to manufacturing, transport, distribution and disposal, their carbon footprint is huge.
Here are some tips to rethink our relationship with technology and in particular with our electronic devices.

- **Use Dark Mode on your devices:** Dark Mode can reduce the display power draw by up to 58.5%.
- **Repair instead of replace and try using your devices longer - instead of changing them even if they still work fine.** When extending the usage of a tablet or PC/laptop from 2 to 4 years, there is a 50% improvement in their environmental impact[11].
  - On average, the production of an electronic device requires an amount of raw materials that is about 50 to 350 times its weight, e.g. for a laptop 500 Kg of raw material is needed.[12]

[10] https://www.digitalinformationworld.com/2020/02/the-global-energy-consumption-of-information-technologies-infographic.html
[11] https://www.ademe.fr/impacts-smartphone
[12] http://multimedia.ademe.fr/infographies/infographie-poids-carbone/

- **Choose "greener" devices whenever possible** that typically:
  - Consume less energy
  - Use recycled materials
  - Can be repaired
  - Limit the use of materials that can damage our health
  - Check the label - there are a number of standards to certify the eco-friendliness of devices[13].

- **Recycle!** Don't keep your old devices at home in your basement, as many materials can be recycled.
  - There is 50 to 100 times more gold in 1 ton of electronic cards than in 1 ton of raw minerals.
  - 54 to 113 million smartphones are abandoned somewhere on our shelves.

- **Reduce your devices' energy consumption**.[14]
  - When leaving your computer or your printer for more than one hour, switch them off, instead of putting them in sleep mode.
  - Switch off your devices completely during the night - including TV boxes, wifi routers, laptops, mobile phones, etc.
  - The average annual consumption of a TV box is equivalent to that of a refrigerator.
  - Limit the number of open (and unused) applications and documents on your devices - this consumes lots of energy!
  - Deactivate GPS, WIFI and Bluetooth options when not needed - they consume lots of battery!

For most devices (phones, laptops, tablets, etc.) there is an increasing number of applications that can help you track energy usage and adopt configuration settings that reduce the consumption of electricity.

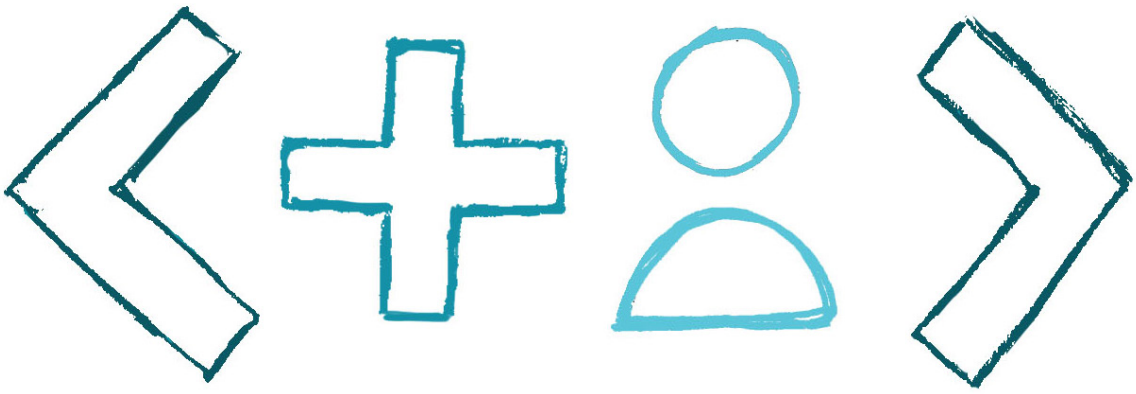
[13] https://ec.europa.eu/environment/ecolabel/
[14] https://www.digitalinformationworld.com/2020/02/the-global-energy-consumption-of-information-technologies-infographic.html

CALL TO ACTION!

Our daily digital actions like sending emails, surfing the Internet, using search engines or storing data come at a real cost for the environment: besides our devices, entire networks of cables, data centers, servers and sensors producing CO_2 emissions are involved.

By re-thinking our digital habits at the personal and professional level and by engaging our family, our colleagues, our class-mates, our friends and our organisations (whether public or private) in this green digital transition, we can play an active role in the reduction of CO_2 emissions.

Start today by greening your digital habits. Share the information in this short paper with your colleagues, family and friends and join Digital for Planet's efforts to achieve an even greater positive environmental impact on our planet.



ABOUT DIGITAL FOR PLANET – D4P

Digital for Planet -D4P- is a **non-profit Association** that aims to grow a strong network **to develop and adopt digital technologies that respect the sustainability of the Earth and that are beneficial to society.**

The increasing importance of digital technologies and solutions for the effective performance and growth of our economy and society is undeniable. However, digital transformation also impacts the environment via manufacture of devices and energy consumption by data providers, storage facilities, processors, and consumers. While digital technologies can accelerate decarbonization by allowing dematerialization and online delivery, substitution of transport and travel, as well as greater energy efficiency in production, **the ICT sector could consume up to 20% of global electricity by 2025, emitting 5.5% of CO2 emission, besides generating huge quantities of waste** (beyond hardware).

Society and ultimately, our planet's future depend on a growing community of individuals and organisations at work to develop sustainable ICT / digital technologies – and D4P is helping to join forces. **Only by mobilising all stakeholders it will be possible to reduce the digital sector's carbon emissions and use tech for a green transition.**

D4P gathers experts and aims to grow this community and empower it, while increasing the positive impact of the many sustainable/green ICT solutions and initiatives that are emerging. We work both with the public and private sectors at national, regional and global level.

We bring together people and organisations that want to talk about digital sustainability. We help you find like-minded people and potential project partners to take your sustainable digital innovation to the next level.

Join the growing community of organisations and individuals at work for sustainable ICT development and adoption. Contribute to the development of a digitally empowered and ethically responsible society.

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