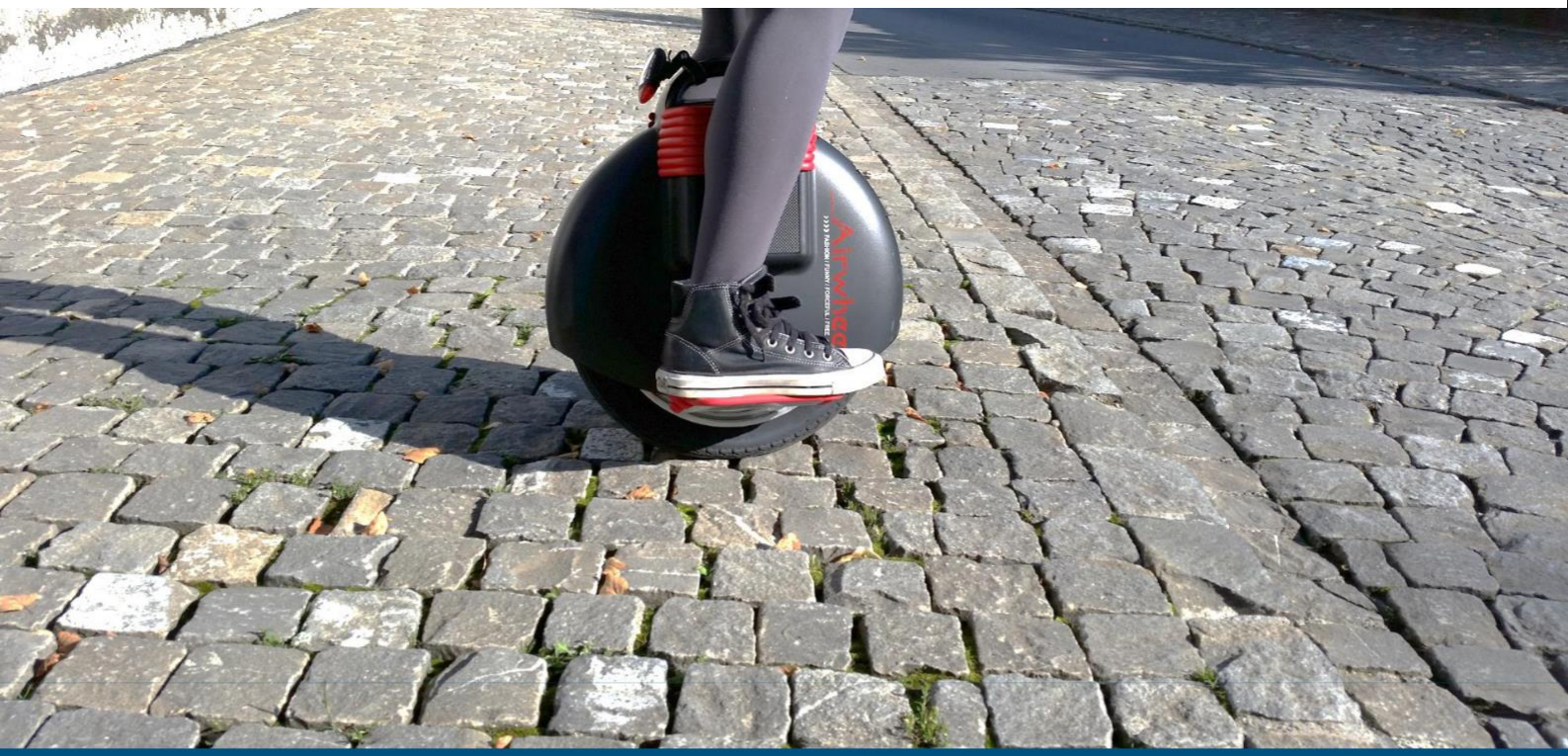
Erasmus+
Enriching lives, opening minds.

European Union



TOOLKIT 2

WORK-RELATED MOBILITY

WHAT METHODOLOGIES AND (DIGITAL) SOLUTIONS CAN CONTRIBUTE TO REDUCING TRAVEL AND POSITIVELY IMPACT CARBON FOOTPRINT?

Co-funded by
the European Union

NATIONAL AGENCY
FOR EUROPEAN EDUCATIONAL
PROGRAMMES AND MOBILITY

Erasmus+
Enriching lives, opening minds.

European Union

NWoW4Net-Zero Project

TOOLKIT 2

Work-Related Mobility

What methodologies and (digital) solutions can contribute to reducing travel and positively impact carbon footprint?

Co-funded by the European Union

NATIONAL AGENCY FOR EUROPEAN EDUCATIONAL PROGRAMMES AND MOBILITY

Erasmus+
Enriching lives, opening minds.

European Union

About the Project

The NWoW4Net-Zero project aims to position HR Directors as key players in contributing to the EU's ambition of carbon neutrality by 2050. NWoW4Net-Zero aims to give them concrete levers of action to drive the transition in their field of intervention and to take advantage of the new ways of working (NWoW), work-places and - organisations resulting from the increased use of digital solutions. The aim of the project is to develop a series of toolkits for action, a training pathway and a knowledge sharing platform. This 24-month Erasmus+ supported project brings together 5 partners:

- CKM - **Centre for Knowledge Management** (coordinator, Northern Macedonia)
- Htag by **Références** (partner, Belgium)
- **Tal Tech** - Tallinn University of Technology (partner, Estonia)
- C&R - **Conseil & Recherche** (partner, France)
- PLS - **Pour la Solidarité** (partner, Belgium)

The EU's ambition is to be the first continent to achieve climate neutrality. Launched in 2019, the Green Deal for Europe commits states to reducing net greenhouse gas (GHG) emissions. The ambition is to fundamentally transform the economic system so that by 2050 the Member States will be carbon neutral, with an intermediate target of reducing the EU's GHG emissions by 55% compared to their 1990 level by 2030. New ways of organising work (also in the wake of the Covid-19 pandemic) and new digital solutions could represent an opportunity to contribute to this ambition.

Through the NWoW4Net-Zero, three avenues are explored to contribute in HR to the achievement of carbon neutrality ambitions:

- **NWoWs**: what modes of organisation and hybridisation of work should be put in place to participate in the objective of reducing environmental impacts?
- **Work-related mobility**: what solutions should be implemented to reduce the carbon footprint of travel to and from work?
- **Digital**: how to reduce the carbon footprint through the responsible use of digital technologies at work and in teleworking?

<u>Expected results of the project</u>

- A training pathway presented as three toolkits: on NWoW, work-related mobility and digital.
- A methodology and training pathway for a personalised learning experience according to the needs of each learner and their organisation.
- An impact methodology and user guide.
- A knowledge platform, an interactive environment in which users can easily learn and obtain information and knowledge about new ways of working and how they can be introduced into organisations via HR.

KNOWLEDGE CENTER

Htag by Références

conseil & recherche

POUR LA SOLIDARITÉ
European think & do tank

TAL TECH

Foreword

New Ways of Working (NWoW) cover spatio-temporal flexibility practices – remote working, workspace planning, flexible working hours, etc. -, management practices - autonomy, trust, participation, etc. -, as well as work organisation practices - (semi-) autonomous teams, etc.

It is rather in flex-work that one will find such levers to contribute to the reduction of CO2 emissions, by working on the working environments.

Table of Content

Learning Objectives

The overall objective is to empower HR professionals to implement practical, innovative mobility solutions that contribute to reducing the company's carbon emissions and enhancing overall sustainability.

Strategic Leadership and Governance in Digital Sobriety:

- Develop skills in advocating and reinforcing the importance of responsible digital behaviour within the organisation, working collaboratively with CEOs, top management, and CIOs/IT Directors.
- Develop skills in influencing and embedding sustainability in the organisation's vision and ethics, specifically relating to the use of digital technologies.
- Learn to guide top management in integrating responsible digital criteria into the company's governance, ensuring sustainability is a core consideration in every IT-related project.
- Learn to practice and promote exemplarity, where leaders 'walk the talk', setting clear examples of responsible digital practices.
- Acquire skills in coordinating with IT departments to develop a responsible IT strategy that limits environmental impact while serving people's needs, focusing on aspects like Green IT, Human IT, and IT for Human.

Operational Implementation and Responsible Digital Practices:

- Develop skills in implementing operational strategies for responsible digital behaviour. Learn to work with procurement to extend the lifespan of IT equipment and promote sustainable usage.
- Acquire competencies in engaging IT and telecom hardware suppliers for energy-efficient products and educating staff on their benefits. Understand how to raise awareness among staff about the sustainability issues related to digital technologies, promoting a culture of digital sobriety.
- Gain expertise in encouraging staff to adopt responsible digital behaviours, such as optimized cloud usage, responsible email practices, and mindful video conferencing. Learn to formalise these behaviours through policies and integrate them into HR practices like training, evaluation, and recognition.

> Develop the ability to measure the digital environmental footprint of the organisation and individual employees, and to use this data to drive continuous improvement in digital sobriety practices.

Chapter 1 - Stakeholders

The Human Resources Director/Manager is not directly responsible for the internal information and telecom systems within the company. But s/he can raise staff awareness of sustainability issues related to digital technologies, and influence their use.

To contribute to the reduction of the company's carbon emissions, the Human Resources Director/Manager has to work closely with different stakeholders, the main ones of which have been identified by the project partners as:

1.1 CEO/Top Management

Defining a vision

CEOs do have to recognise the leadership role they personally need to play to embed sustainability deeply and widely in their organisations.

The CEO and Executive Committee must define a vision, establish a clear line of ethics and values in terms of sustainability, and express ambitions on sustainability and carbon emission reduction. What are the company's commitments and directions regarding the responsible use of information and telecommunications technologies?

This will help managers and employees make the connection between sustainability and the company's mission, and then to their own daily work.

Governance

Another challenge consists of integrating responsible digital criteria into the company's overall governance in every project linked to IT. This does not mean that certain projects will not be carried out, but rather that the right questions will be asked to improve the approach — for example, not to develop certain little-used functions that would waste resources.

This spirit applies to IT but could very well extend to all the company's departments, including HR: more and more companies are now associating a carbon budget with their various projects.

Exemplarity / Walk the talk

Research shows that exemplarity is highly critical and has a strong influence on employees' change acceptance. It is essential for top management to 'walk the talk' and provide employees with clear examples of what is expected and valued. Exemplarity can be declined at diverse levels.

1.2 Chief information officer (CIO) / IT Director

The CIO/IT Director and its department are the stakeholders in charge of devising the company's IT strategy and ensuring that all systems necessary to support its operations and objectives are in place.

In the current state of knowledge and practice, IT cannot be **« sustainable »**. But it can be **« responsible »**, in the sense of limiting its impact on the environment. Responsible digital is not just about « **Green IT** » — reducing the environmental footprint of digital technology — or « **IT for Green** » — using digital technology to reduce the environmental footprint in other areas. There are two other axes: « **Human IT** » and « **IT for Human** ». These axes question how to reduce the negative social impacts of digital technology (for example, accessibility issues for people with disabilities) and how to put IT at the service of people.

Therefore, it is important to make sure you work with IT on responsible behaviours. Otherwise, you risk making recommendations that IT will not support, sometimes simply because they don't even know about it. It is important to have a concerted and consistent approach.

> **Example:** An expert explains how he worked with a large French multinational on a Green IT project. For them, IT represented 2% of the global carbon footprint. But given the size of the organisation, this impact was very significant. The executive committee decided that all departments, no matter their size and carbon footprint, should find ways to halve this footprint. From that moment on, corporate cohesion was found in a joint effort, within and across teams. They tried to understand what was happening in the other departments, how to help each other, etc.

1.3 Procurement

The IT department is responsible for the technical specifications and the frequency of replacement of the equipment, together with procurement.

The main impact of IT from an environmental point of view is first and foremost the manufacture of equipment, well before data centres and networks. The real problem is the speed of replacement: we tend to replace our equipment far too quickly.

For example, a smartphone in Belgium has a lifespan of 18 to 23 months, whereas from an electronic point of view, it can last 7 or 8 years without any problems, or even longer.

Therefore, it is important to have a consistent policy in terms of sustainable use of equipment within the organisation.

1.4 IT and Telecom Hardware Suppliers

Suppliers of digital solutions and devices are important stakeholders as they possess information and knowledge on the energy efficiency of the products they develop and sell, the product life cycle, product maturity, and the possibilities for its recycling.

Along with procurement staff, HR professionals can involve IT suppliers by asking them about the origin of products. Suppliers could also impart their expertise by training staff on the benefits of sustainable use and energy consumption, and of proper disposal of electronic waste.

80% to 90% of the environmental footprint of the device is already present when it is first switched on. Particularly, the extraction of minerals and the pollution linked to their purification to obtain the metals needed to manufacture digital devices has a major impact. To get a gram of gold, one must extract no less than a ton of rock! For other metals, it is even worse than that. It is estimated that it takes more than 200 kilograms of ore to make a 120-gram smartphone. This production will emit around 80 kilograms of CO2 equivalent (the unit of measurement for greenhouse gas emissions).

Furthermore, the recycling capacity of these metals is extremely low. In a smartphone, there are about 60 metals, among which we only can recycle 17. The rest is thrown away. **The key message is to buy less equipment, take care of it, and keep it for as long as possible**.

If you don't use an item of equipment anymore, don't put it in a drawer, but give it a second life by donating it to associations, reselling it second-hand, reconditioning it, etc. Today, it has become possible for a company to buy reconditioned equipment.

HR Directors have a role to play in raising awareness of good digital practices and more specifically explaining why it is important to take care of one's equipment.

> **Good to know**
>
> « The Cloud now has a greater carbon footprint than the airline industry. A single data centre can consume the equivalent electricity of 50,000

> homes. At 200 terawatt hours (TWh) annually, data centres collectively devour more energy than some nation-states. Today, the electricity utilised by data centres accounts for 0.3 percent of overall carbon emissions, and if we extend our accounting to include networked devices like laptops, smartphones, and tablets, the total shifts to 2 percent of global carbon emissions. »
>
> *Source: Steven Gonzalez Monserrate, The Staggering Ecological Impacts of Computation and the Cloud, The MIT Press Reader,*
>
> *https://mit-serc.pubpub.org/pub/the-cloud-is-material/release/1)*

1.5 Regulators

Regulators are important stakeholders as they develop requirements related to Green IT — such as energy efficiency standards, e-waste disposal regulations, and carbon footprint reporting requirements. These regulations are becoming very strict in the EU and cover a wide scope of behaviours. Organisations will be subject to increasing regulations in favour of digital responsibility. The digital field is set to become increasingly standardised, as evidenced by the European Parliament's July 2017 vote on a resolution for longer product lifetimes.

For HR Directors and their teams, Regulators are an important source of information and knowledge on how to develop organisational policies and strategies which cover the responsible use of IT and the digital sobriety and how to incorporate them into human resources management. Therefore, it is important for you to communicate and collaborate with them as opportunities arise, meeting them at training, workshops, info days which are sometimes organized by regulators.

Chapter 2 - Creating a Culture of Sustainability

2.1 Raising awareness

Depending on the source, digital technology now accounts for 3 to 4% of global greenhouse gas emissions. Compared to other sectors, this share remains modest, but the annual growth in digital consumption should raise concerns for companies, warns the **Institut du Numérique Responsable** (France/Belgium). In service companies, for example, the top three carbon emission items are travel, buildings and IT — in an order

that can vary from one organisation to another. IT can at times be the main item, unbeknownst to the company because it is not measured or is assessed poorly. Mobility, for instance, is very clearly associated in people's minds with environmental issue, but IT is much less so.

2.2. Promoting understanding

It is key to learn to distinguish the essential from the accessory. If you want to reduce the environmental impact of digital technology, you need to know that limiting the number of emails will only have a marginal impact — although this is an action that is often advocated. The main negative impact of digital technology on the planet comes from equipment and their premature renewal. We must not fight the wrong battle.

Let us distinguish very early on between direct effects, indirect effects and rebound effects, and therefore value the positive actions that really make a difference.

2.3 Encouraging Digital Sobriety

Responsible IT does not mean that we will/should encourage the reduction of all digital uses. In fact, people are increasingly asking themselves how to reduce the negative environmental impact of digital use, since everything around them is digital. The whole society has become digital. We can hardly do anything without it.

The real challenge is therefore to remove everything that is futile. And, here, HR can provide some valuable answers.

> **Good to know**
>
> A study by the UK's OVO Energy highlighted the environmental impact of short, unactionable pleasantry emails (i.e., "thank you," "have a great weekend,"). This study found that the UK could reduce its carbon output by over 16,433 tons, simply by each adult sending one less email per day.

2.4 Promoting a responsible use of IT / Telecom technologies

As far as equipment use is concerned, video emphatically plays the most negative role. As much as 80% of internet bandwidth is used for video — of which only a quarter is for video conferencing or video calling, and the remaining three quarters is used for streaming platforms, such as Netflix, YouTube, adult content, etc.

Turning off your camera during an individual call makes little difference. Things escalate during a group video session. The COVID-19 crisis was a strong witness of this change. Intense use of video entailed a drastic change in bandwidth allocation and data centre equipment – which is precisely where the real impact of remote working lies.

The consequences of the pandemic were twofold: on the one hand, a whole series of companies that were not equipped to enable remote working had to over-equip themselves — buying extra laptops, screens, etc. On the other hand, all the people who could not work remotely and were stuck at home during the lockdown ended up watching Netflix, with real bandwidth impacts. The network providers added more hardware to increase their capacity, causing a significant impact in terms of environmental footprint.

It should be remembered that a responsible use of technology is a very marginal dimension, compared to the impact of the extremely rapid renewal of equipment and data centres.

2.5 Double check for coherence

Today, everyone is taking a stand on sustainable development. The reality is more nuanced, however: some companies truly want to change their business model — fully aware that it could be a prerequisite to remain in certain markets in the short or medium term —, and others that are doing some fairly effective greenwashing.

A third category is companies where one part of the organisation really wants to change the game while, at the same time, the other part makes massive advertisements saying that « the metaverse is the future of humanity ». But it's no different from having a boss telling you one day how important it is to be energy efficient, and the next day having him fly to a city that's less than four hours away by high-speed train. We are dealing with

profoundly human truths, made up of contradictions, great hypocrisy, small cowardice and a real desire to act.

A third category of companies sends concerningly mixed messages. They advertise for sustainable practices, yet invest massively in new, energy-greedy technologies such as the metaverse. This would be the equivalent of having a manager advocating for greener mobility practices while booking a jet for a short-distance trip. The net zero dynamic reveals profound human nature, between creating facades and fostering a true desire to act.

The HR Director/department has a role to play in being the conductor of all departments in the organisation. Let's take the example of training: what is the point of training in digital responsibility and sobriety if, at the same time, you propose a major training programme about the metaverse for technicians?

2.6 Promoting creative thinking

Encourage people to think about ways they can reduce greenhouse emissions through responsible use of IT.

- ***Digital detox challenges*** — Organise digital detox challenges for employees, encouraging them to take a break from technology for a specified period of time, such as a day or a week. This can be done as an individual challenge or as a team-building activity.
- ***Screen-free breaks*** — You can encourage employees to take screen-free breaks throughout the day, by providing opportunities for physical exercise, mindfulness practices, or other non-digital activities.
- ***Digital-free meeting policy*** — You can establish a policy that discourages the use of digital devices during meetings.

Chapter 3 - Adapting HR processes to help reduce carbon emissions

3.1 Be involved as a strategic Partner

Traditionally, HR teams do not take part in the development of Sustainability strategies — particularly in the case of Responsible IT strategies —, nor in their implementation. As is the case for most « green » initiatives, top management tends to foster trends and relies on middle management to implement them.

However, because of their implication in staff hiring and their impact on corporate culture, HR members can be instrumental in the introduction of these standards.

As an HR Director you need to support the development of Responsible IT standards across the organisation and collaborate with the IT department in defining tasks, roles, and responsibilities of employees.

3.2 Formalise Responsible IT Behaviours

Formalise Responsible IT behaviours of employees through the development and introduction of policies. These policies may cover:

1. Cloud Usage Policies, which define optimised use of cloud services by employees, contractors, and third-party vendors.
2. Policies requiring employees to power off their computers at the end of the day, or requiring employees to use smartphones and tablets, instead of desktop computers or laptops that consume higher amounts of energy and increase the carbon footprint.
3. Policies for responsible use of IT equipment. Good examples are the following policies:

- ***Implement a Bring Your Own Device (BYOD) policy***

  Employment contracts could stipulate that the employee can use his or her own computer equipment and that he or she should be compensated for this.

- ***Introduce a Corporate Owned, Personally Enabled (COPE) policy***

  A second lever is the use of work equipment for personal use at home. In the past, it was extremely rare for companies to allow this.

In either case, these approaches ensure that people do not end up with a work laptop and a home computer. It is possible to plan a dual boot to start the laptop in two ways, one for work use and the other for personal use.

> **<u>Good practice</u>**
>
> **Work via a « cafetaria plan »**
>
> *(if your national regulations allow this type of system)*

> In Belgium, the « **cafetaria plan** » is a programme that allows the worker to select certain elements of the remuneration themselves, but always within a framework defined in advance by the employer.
>
> In such a framework, you could give incentives for the purchase of reconditioned Equipment over new devices, the same way you can subsidise electric bikes more easily, and big cars less easily.

3.3 (TRAINING) Decrease usage by raising awareness and training

Training is an essential dimension: HR Directors/departments will have to ensure that the people in their organisation have the capacity to carry out a responsible digital strategy, so as to understand, integrate and deploy it. Without the brains and the people behind it, it remains wishful thinking.

There are various good practices to be transferred, whether it is about equipment, the use of video, or even e-mails.

For example, **rather than sending documents by email, it is better to share them through a common folder**. A link to a shared document allows people to have a single copy to work on, rather than sending commented documents to each other that are replicated on several servers. **When sending an email, instead of extensive recipient lists,** carefully choose the people who are really concerned.

Deleting emails is sometimes recommended. However, it is also true that in some cases, email clearing can have more negative impacts than keeping them — which might sound counter-intuitive! Bundle-deleting (for instance all emails before a certain date) is a responsible decision, which should be enacted whenever possible. However, painstaking, case-by-case email deletion uses extensive IT resources and becomes more environmentally costly than keeping them in storage.

The important thing is not to send data in the first place if it is not useful. Sending data consumes as much as one to two years of storage.

A team chat will usually be better than emails, especially as it allows exchanges to be found in the history and the information is then stored in one place. But, again, as long as we stick to text, this is marginal. It is more likely to be the uploading of videos and, to a lesser extent, photos that has a real impact.

Before creating a new tutorial, it's best to check that there aren't already some existing ones on the topic.

> **Some examples of skills to be acquired in training:**

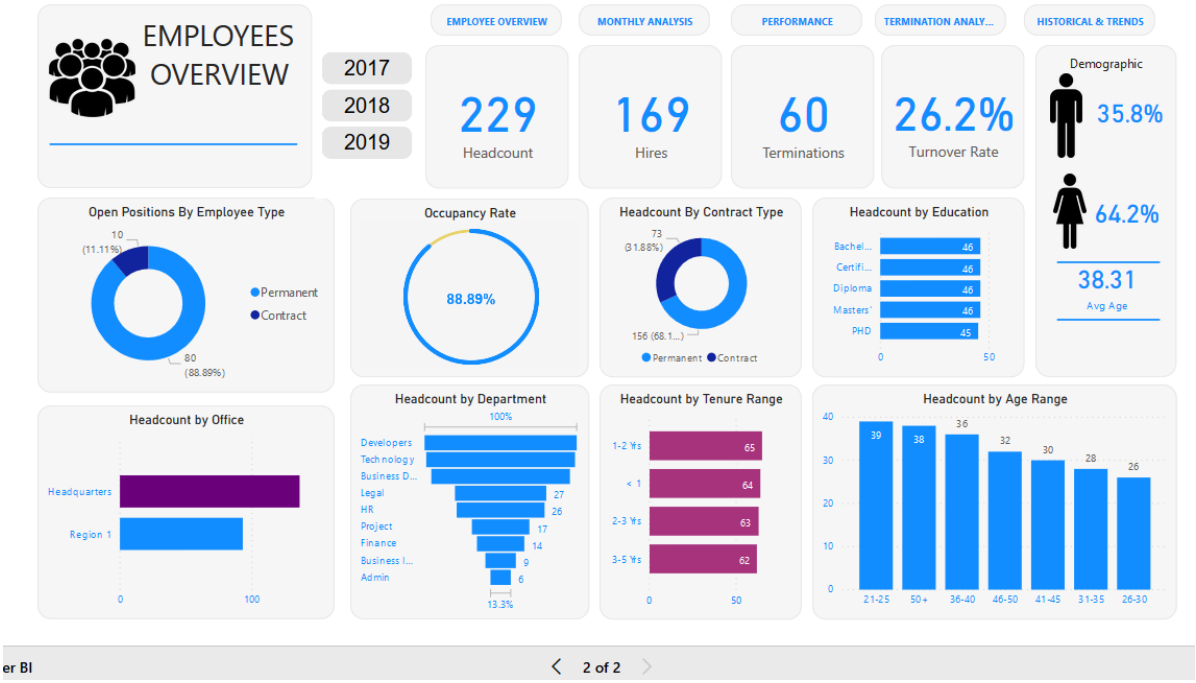
- Understanding of global environmental issues
- Understanding of the impacts of digital technology
- Notion of the life cycle of a device
- Understanding the life cycle of a digital service
- Identification of the consumption factors on a web page, in software, etc.
- Identification of the direct and indirect impacts of a technology
- Mastery of the issues and good practices related to the purchase of equipment, the management of Waste Electrical and Electronic Equipment (WEEE) and reuse
- Ability to conduct an awareness campaign internally or with suppliers and service providers, etc.
- Accessibility and eco-design of digital services
- Ability to measure energy consumption during the use phase of digital equipment
- etc.

Source: Responsible Digital Best Practices Guide for Organisations, 2022

3.4 (DATA & ANALYTICS) A practice that needs to be questioned

The HR function has not escaped the hype of analytics and data... Rightly so?

This is worth questioning, and for several reasons, according to experts of the **Institut du Numérique Responsable**. Very often, HR services use vast amounts of data to function within the company. Such data is often iterated and compartmentalised in different places. We must avoid any duplication of data by trying to have central points where the primary data is available and where, when in need, we can go and find it. It is then no longer necessary to copy, copy, copy... and thus multiply the quantities of data.



On the other hand, it is true that data analytics is on the rise in HR. The larger the structure, the more interesting the statistics can be. But in many cases, in our countries, companies are small, albeit a few exceptions. We must therefore question the real relevance of such tools: are we using them because they are really useful or because everyone else is doing it? Let's reduce our needs to what is truly useful. This is the whole value of sobriety, which also applies to IT!

3.5 (EVALUATION & RECOGNITION) Value positive actions

Value positive actions recognise positive actions of employees should and must be rewarded to be incentivised. Here the HRDs are the first to be on the front line. Let's stop valuing only the sales performance, the number of millions attained, the number of publications or followers.

Let's also value positive actions for the climate, for social issues, for well-being. Let's report on what is being done well, what needs to be done. This means reviewing evaluation and recognition practices.

There is a real responsible digital component to be included in evaluation interviews: 'How long have you had your computer and smartphone?', 'What eco-actions do you take?', 'What practices could you change for more sustainable digital practices?' are questions that need to be asked and included in discussions. An action grid on responsible digital use should be requested at each professional interview.

3.6 (REWARD) Should part of the variable pay be linked to the implementation of more responsible IT practices?

A growing trend considers that the bonus is clearly better than the malus: the carrot is better than the stick. Instead of punishing non-sustainable behaviour (and risk creating disengagement, or even resignations), it is always more beneficial for the company to apprehend behaviour change through a positive lens. Therefore, rather than giving a malus to collaborators who do not adhere to greener behaviours, reward those who do!

On the other hand, distributing bonuses and maluses must be handled with care and, above all, not used to have collaborators against each other. To say that only the 'best' will get a share of the cake is harmful and unhealthy. This is especially true in the case of green behaviour: most of those who act do not do so for extra income.

Moreover, giving a bonus can entail more purchase down the road, which is not a good solution for the environment. There are other ways of valuing social involvement than the financial approach, and more innovative ways to do so need to be invented.

It would be much better to make responsible digital technology part of a development and encouragement process, to make it a strength and an opportunity in a participation process.

Chapter 4 - Tools to support emissions reduction

4.1 Sign the « Responsible Digital » Charter

With the signature of this charter, organisations affirm their commitments to enter resolutely into a "Responsible Digital" approach.

Link: https://isit-be.org/wp-content/uploads/2021/03/Sustainable-IT-Charter-ISIT-BE.pdf

4.2 Measurement

In order to shed light on the impact of our over-consumption of digital technology, the Institut du Numérique Responsable has created a simple calculator that allows individuals to assess their professional digital impact.

Another measurement tool, called WeNR, evaluates the footprint of the Information System of organisations to enable them to identify where the impact lies and to identify their level of Digital Responsibility maturity, both qualitative and quantitative. This tool takes the form of an online questionnaire, free to use and accessible to all organisations, whether large or small. Produced in partnership with La Rochelle University and EIGSI, WeNR is based on the work of a thesis financed by La Rochelle Agglomeration and a scientific collaboration between INR France, INR Switzerland, the Belgian ISIT and the University of Louvain (UCLouvain).

WeNR comes in 3 versions to meet the needs of as many organisations as possible: from the qualitative maturity audit to the comparative audit by sector of activity, detailed quantitative and actionable.

WeNR Light: This questionnaire, available online, allows to assess the level of maturity of organisations in terms of Digital Sustainability (People-Planet-Profit). (end of September 2022)

WeNR Standard: WeNR takes the form of a set of quantitative and qualitative questionnaires to be completed by each participating organisation, using a specific file template provided by the ISIT. This questionnaire is accessible online until September 9, 2022, the data is then treated confidentially and asynchronously with the results being submitted 2 to 3 months later in the form of a first-level report.

WeNR Plus: This version of the tool is reserved for ISIT member organisations. WeNR + uses the standard WeNR model and calculator. It provides comprehensive and detailed reports from a quantitative, qualitative, and comparative point of view with organisations in the same sector.

The analysis tools provided allow for the identification of courses of action to establish a sustainable IT strategy.

To access these tools: https://wenr.isit-europe.org/

> **Assess your individual/professional digital environmental footprint in kg CO2 eq.**
>
> To shed light on the impacts linked to our overconsumption of digital technology, the ISIT has created a calculator that allows us to simply calculate our professional digital impact. This assessment covers:
>
> - Equipment
> - Online usage
> - Cloud storage
> - Sending mails
> - Business travels
>
> And shows your impact compared to
>
> - the average carbon footprint of a French person
> - the quota to be respected in 2050 to comply with the Paris Agreement
>
> To access the calculator: https://myimpact.isit-europe.org/

fruggr is an application developed to measure the environmental and social impact of the IT applications of companies. Regular measurement is the key to continuous improvement. fruggr automatically collects various raw data: data usage, source code, and analytics. The software relies on recognised impact factors (One byte model of the Shift Project, Ademe carbon base, IEA, EEA...) to calculate the most accurate scores possible. fruggr offers a carbon assessment covering all 3 scopes. The tool also offers a certificate rating grid.

Link: www.fruggr.io

4.3 A Strategic Roadmap

The priority must be the definition of a strategic roadmap for responsible digital technology, based on concrete and effective measures, with the definition of indicators, implementation of a skills-development programme, signing of a charter, participation in global events such as Digital Clean-up Day (usually in March), a global awareness day about the environmental footprint of digital technology.

As in many other areas, the main issue is inaction and lack of transparency. The roadmap must also be realistic, paced, and sustainable if it is to be successful. Launching the idea that any given organisation could be carbon-neutral within six months is a dangerous allegation, for instance. It is impossible to achieve, illusory and utopian. This would ultimately discredit the project itself.

4.4 Sustainable IT MOOCs

- ISIT and its partners are proposing a **MOOC on Sustainable IT** to enable everyone to be informed and trained. The Awareness Sustainable IT MOOC is a short training program allowing a first approach to Sustainable IT for everyone. The complete Sustainable IT MOOC consists of 4:30 of video, text, and interactive content. It offers theoretical knowledge to master the fundamentals of the Sustainable IT Approach. These two modules are in free access: www.isit-academy.org
- The Mooc ***Environmental impacts of digital technologies*** aims to address the impact of Digital on the environment, its positive and negative effects, the phenomena observable today, and the projections we can make for the future. It is intended for educational mediators and more generally for the public. Their webpage offers for each part a presentation of the content, an entertaining and educational video, ready-to-use teaching capsules, concept sheets to deepen certain notions and a bibliography with additional resources. Link: https://learninglab.gitlabpages.inria.fr/mooc-impacts-num/mooc-impacts-num-ressources/en/index.html

4.5 Responsible Digital Best Practices Guide for Organisations

The objective of this guide is to raise awareness of the impacts of certain practices encountered within organisations, and to share examples of responsible digital practices that can help reduce the environmental footprint of digital technology. This guide is intended for all types of organisations, in the public and private sectors. Some examples of good practices are more adapted than others depending on the context and maturity of the responsible digital approach within organisations. More responsible digital is a vast subject, which does not only concern the digital department. Many cross-functional departments such as purchasing, human resources, communication, general services, etc. are also involved. This guide is therefore aimed at a wide audience in relation to information systems such as IT departments, system and network administrators, developers, buyers, users, etc.

To download the guide : https://ecoresponsable.numerique.gouv.fr/docs/2022/guide-de-bonnes-pratiques-numerique-responsable-version-beta.pdf

4.6 Digital Sobriety Certificate

A digital sobriety certificate considers that users can significantly reduce their environmental impact through their choice of equipment and online behaviour. Inspired by the energy saving requirements introduced in several European countries from the year 2000 onwards, these certificates would make it possible to internalise the environmental externalities of digital technology and correct certain failings of the digital market. It may be that in the years to come, the use of these certificates could develop in companies, with the idea that it would be up to the HR function to collect data from managers on what has been put in place to encourage employees to reduce their use of digital technology: meeting policies, sending emails, hybrid work, video conferences, etc.

4.7 Responsible Design of Digital Services

Shifting to a responsible design of digital services means creating value by designing digital products and services that are more efficient from an environmental, social, and economic point of view. This falls in line with the new performance indicators that companies must now face: more than just economic performance, organisations must also provide evidence of their social, and environmental performances. This does not mean that certain projects will not be approved, but rather that the design of the digital services needs to be improved — for example, not to work on developing certain little-used functions that would waste resources.

4.8 Use the auto switch-off hardware/features

Cap Gemini assessed 24 sustainable IT use cases. The analysis shows that the automatic shutdown of hardware and functionality delivers the greatest savings (14% on average) through reduced energy consumption while reducing carbon emissions in this category.

Chapter 5 - Inspiring initiatives

5.1 Create a narrative

The creation of a narrative can drives social orientation and get employees' engagement. Implementing disparate actions, such as reducing email, can be unfairly perceived as greenwashing. This is why it is necessary to create a cohesive narrative within the company. You need to have a real story to tell, one that embodies a committed, systemic, and long-term approach. This narrative must, of course, start with small steps, but also needs to have greater ambition.

5.2 Develop a network of "responsible digital" referents within the organisation

Such a network allows early adopters (pioneers) who will be the best ambassadors for your policy. They have a better knowledge of their organisations, especially if they are spread over several sites. These early adopters are trained, and therefore they gain skills and know how to mobilise the resources at their disposal to circulate the information internally.

5.3 Limit Geo Localisation

Geolocation resources (such as Google Maps and Waze) have revolutionized travel, but they can use up considerable amounts of data due to long trips and general overuse. Tips for users:

- Limit the use of geolocation apps when traveling to previously visited destinations.
- Only use one geolocation service.
- Turn off mobile data when geolocation is not needed (such as during a long stretch of highway driving).
- Utilise offline geo-tracking options where possible.

5.4 Change the settings of your printers

A quick win in terms of energy consumption can be made in printer fleet management. Changing the settings for standby, low power or sleep mode is interesting and will result in energy savings. With printer power consumption dashboards available to everyone, this is a concrete, "tangible" thing that everyone can see

Chapter 6 - Recommendation to implement the HR contribution to Net-zero

Be careful with Remote Working

A study by ADEME in France shows that the positive effects of reduced commuting are modulated by significant rebound effects. The rebound effect is described as unfavourable due to four mechanisms, including an increase in video flows mainly linked to video conferencing and new energy consumption at home (heating, lighting, PCs, etc.). The study also points to new systemic or long-term rebound effects to be assessed and monitored, such as an increase in digital equipment.

The impact of teleworking will only be positive if a company otherwise reduces the amount of workspace used. If they maintain them and continues to heat and light them in a hybrid work environment, teleworking does not represent a real gain.

References

Capgemini. (2022*). Sustainable IT*. Retrieved from https://www.capgemini.com/fr-fr/wp-content/uploads/sites/6/2022/04/Final-Web-Report-Sustainable-IT-1.pdf

Center for Knowledge Management . (n.d.). *STUDY NEWWAYS OF WORKING FOR NET ZERO EMISSION*. nwow4netzero. Retrieved May 27, 2022, from https://nwow4net-zero.eu/images/NWOW4NetZero/IO1/Study_NWoW4Net_Zero_Emission.pdf

French Government. (2022). *Guide de bonnes pratiques numérique responsable*. Retrieved from https://ecoresponsable.numerique.gouv.fr/docs/2022/guide-de-bonnes-pratiques-numerique-responsable-version-beta.pdf

Fruggr. (n.d.). *Assessing the environmental and social impact of IT applications*. Retrieved from http://www.fruggr.io

Inria. (n.d.). Mooc *Environmental impacts of digital technologies*. Retrieved from https://learninglab.gitlabpages.inria.fr/mooc-impacts-num/mooc-impacts-num-ressources/en/index.html

Institut du Numérique Responsable (n.d.). *Sustainable IT Charter*. Retrieved from https://isit-be.org/wp-content/uploads/2021/03/Sustainable-IT-Charter-ISIT-BE.pdf

ISIT - Institut du Numérique Responsable. (n.d.). *Professional Digital Impact Calculator*. Retrieved from https://myimpact.isit-europe.org/

ISIT Academy. (n.d.). *Sustainable IT MOOC*. Retrieved from http://www.isit-academy.org

Monserrate, S. G. (n.d.). *The staggering ecological impacts of computation and the cloud*. The MIT Press Reader. Retrieved from https://mit-serc.pubpub.org/pub/the-cloud-is-material/release/1

WeNR - Institut du Numérique Responsable. (n.d.). *Digital Sustainability Evaluation Tool.* Retrieved from https://wenr.isit-europe.org/

Co-funded by the European Union

НАЦИОНАЛНА АГЕНЦИЈА ЗА ЕВРОПСКИ ОБРАЗОВНИ ПРОГРАМИ И МОБИЛНОСТ

NWoW4Net-Zero project Is co-funded by the Erasmus+ Programme of the European Union