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Interview conducted on 20 June 2022

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 shouldn't the annual growth in digital consumption raise concerns for companies?

"Most certainly. 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. Sometimes, IT will be the main item, unbeknownst to the company because it is not measured or because it is poorly measured. Mobility is very clearly associated in people's minds with the environmental issue, but IT is much less so. However, awareness of the problem is growing. This 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 answers."

You are reluctant to use the concept of sustainable computing in favour of responsible computing...

"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*: how to reduce the negative social impacts of digital (for example, accessibility issues for people with disabilities) and how to put IT at the service of people."

What are the main negative impacts of IT in terms of carbon emissions?

"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. About 80% 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, you have to extract a ton of rock! For other metals, it is even worse than that. It is estimated that it takes more than 200 kilos of rock to make a 120-gram smartphone. This production will emit around 80 kilos of CO₂ equivalent (the unit of measurement for greenhouse gas emissions). Furthermore, the recycling capacity of these metals is extremely low. If you take a smartphone, there are about 60 metals in it, and we are only able to recycle 17. The rest is

thrown away. So, the key message is: buy less equipment, take care of it and keep it 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. The HRD has 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."

More generally, what can the HRD do to promote more sustainable IT?

"The HRD can use various levers. The first lever would be to implement a *Bring Your Own Device* (BYOD) policy: in other words, the employment contract should stipulate that the employee can use his or her own computer equipment and that he or she should be compensated for this. A second lever is the use of work equipment for personal use at home - the so-called *Corporate Owned, Personally Enabled* (COPE): 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 your laptop in two ways, one for work use and the other for personal use. A third lever consists of working via a cafeteria plan - a programme that allows the worker to select certain elements of the remuneration himself, but always within a framework defined in advance by the employer - giving incentives for the purchase of reconditioned equipment. A bit like subsidising electric bikes more easily, and big cars less easily."

We often hear that remote working is positive for the environment, but only taking into account the savings in travel to and from work. Shouldn't we include the increased digital use of this form of work?

"A study by ADEME in France shows that the positive effects of a reduction in 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 telework would only be positive if a company otherwise reduces the amount of workspace used. If it maintains them and continues to heat and light them in a hybrid work environment, telework does not represent a real gain."

In the use of digital technology, which uses contribute the most in terms of carbon emissions?

"It should be remembered that this is a very marginal dimension, compared to the impact of the extremely rapid renewal of equipment and data centres. In the use of equipment, it is clearly the use of video that 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 for Netflix, YouTube, pornography, etc. When making a video call, turning the camera on or off makes little difference. Except, of course, when everyone starts making videos, as happened in the wake of the health crisis. This massive use means adding network capacity and equipment in the data centres. This is where the real impact of remote working lies. The consequence of the pandemic was 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 couldn't 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, with a huge impact in terms of environmental footprint."

Here again, what can the HRD do?

"Decrease usage by raising awareness and training. 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 you send an email, don't put the whole world in copy, but carefully choose the recipients who are really concerned. Deleting emails is sometimes recommended, however, in fact, sometimes it is the last thing you should do. In some cases, deleting emails can have more negative impacts than keeping them - this is of course counter intuitive! If I delete all my emails before 2020, that's fine! If you can, do it. But if you must go through them one by one to decide which ones you're going to delete, using the IT resources behind them will be 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."

What advice would you give to HRDs?

"Make sure you work with IT on responsible behaviour. 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. For example, I 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 preferred to say that all departments, whatever their size and carbon footprint, must find ways to halve this footprint. From that moment on, there is corporate cohesion because everyone must contribute and finds themselves 'suffering' on their own scale. They then try to understand what is happening in the other departments, how to help each other, etc.

Another challenge consists of integrating responsible digital criteria into the company's overall governance in every project that has anything to do with 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 approach 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 to their various projects.

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

"This is worth questioning, and for several reasons. Very often, in HR, there is a multitude of data in the company, often the same but 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 we need it, 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's 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, with 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 really useful. This is the whole value of sobriety, which also applies to IT!

The Institut du Numérique Responsable offers (among other things):

A tool to measure the carbon footprint of IT:

A tool to measure maturity from the point of view of responsible computing

A guide to responsible digital practices

A guide to responsible digital purchasing

Training courses, conferences, guidelines

A community of over 200 organisations committed to a more responsible digital environment

More info: <https://isit-be.org/fr/ressources>