Why 2024 will be the year of Green IT

In tech, we tend to think our activity is pretty clean. We work on shiny new computers, editing files that live in a pristine cloud… and we've replaced so many business trips with GMeets that we can't impact the planet that much, can we? Think again.

The digital sector accounts for *up to 4% of global greenhouse gas emissions* — double that of civil aviation — and that percentage could triple by 2050 if no corrective action is taken, according to France's national environmental agency, ADEME.

Nearly 80% of those emissions come from hardware, according to *ADEME and French telecoms regulator Arcep* (16% from data centres, 5% from networks).

And let's not forget that data centres — the real-life incarnation of that aforementioned "pristine cloud" — represent *1% of global emissions*.

So reducing digital's impact is all down to hardware manufacturers and cloud providers, right?

Wrong again!

All hardware, be it in our homes, our businesses, or in data centres, runs on code created by developers. And sometimes that code isn't optimised. Indeed, *according to Intel*, infrastructure and software inefficiency count for over 50% of data centres' greenhouse gas emissions.

So reducing digital impact is everyone's business: not just cloud providers', hardware makers' and engineers'. Green IT's implications reach far beyond IT teams, to legal, financial, procurement, HR, design and many more departments.

And as you may have gathered from COP28, *we don't have time* if we want to keep global warming under +1.5-2°C by 2050.

So, why will 2024 be the year of Green IT?

1. It's better for the planet

As you might expect, the first benefit of green IT is emissions reduction. In data centres, addressing software inefficiencies means less energy used for more results. In hardware, buying reconditioned devices from *Back Market* or similar immediately removes from the equation the emissions impact of making new ones (an impact which can be up to 80%, for smartphones, for example).

And in software, the results can be incredible. The *Green Software Foundation* (GSF) shares the example of how consulting group BCG helped a major telco to cut its IT energy consumption by 30%… simply by reviewing its codebase. BCG notably used SonarQube, developers' go-to tool for improving programming efficiency. Once these optimisations had been applied in one division, they were easily duplicated throughout the company, leading to major emissions reductions at scale.

2. It's better for budgets

$26.6B per year, or 8% of total cloud expenditure, is wasted, according to *a 2021 report* cited in a *fascinating presentation* by Red Hat's Holly Cummins. Why? Because too many cloud instances are left on, but unused.

So one obvious tip is to identify and destroy what Cummins calls "cloud zombies". You can then go one step further simply by turning off your cloud instances at night. This can save around 30% on your cloud bill — according to Cummins — therefore similar proportions of energy and emissions.

Then there's eco-design, another key part of green IT, which aims to reduce websites' emissions. Why is this effective? Because websites today are *197% heavier than ten years ago*. But not necessarily that much better. So EDF Group's Dalkia, for example, cut the server needs of its website from seven to two, according to Orange Business, simply by applying eco-design principles like using less video and lighter image files. This reduced its cloud bill, and emissions, by a corresponding 3.5 times.

3. It's better for developers

Ask any expert, they'll agree that there's no such thing as "green coding"! The principles of *clean* coding, however, have remained unchanged for the past twenty years or so. All developers want more efficient code, with the knock-on effect of consuming less energy. The simpler developers' lines of code are, the better; the less paths needed to get from A to B, the better, and so on. And, as mentioned above, this efficiency can be measured with tools like SonarQube… which now even has a green plugin, called *ecoCode.*

The next level for green coders involves using cutting-edge cloud tech like Kubernetes to automatically run workloads only at times when local electricity networks' carbon intensities are as low as possible ("time-shifting"), or in the regions with the cleanest electricity ("location-shifting"). The former can reduce software's carbon intensity, and therefore resulting emissions, by 15%; and the latter by 90%, according to *Microsoft*, which calls this essential practice "*carbon-aware computing*".

When you consider carbon intensity can vary by multiple degrees over 24 hours, or that French electricity is 12 times less carbon-intensive than in the USA, it's not surprising that carbon-aware computing can bring about major green IT wins.

4. It's better for compliance

The other reason we don't have time: the law is catching up with us! As of this year, all European companies with over 250 employees will have to comply with the EU's new *CSRD* directive for non-financial reporting, which will impose hundreds of new data-reporting points, including IT-related ones. Then there's the *RGESN*, France's guidelines for eco-design, which also cover hundreds of compliance points, and which could soon become EU law.

Last but not least, there's Europe's *Carbon Border Adjustment Mechanism*, or CBAM, essentially a tax on carbon-intensive goods entering the continent. GSF founding member and Strategically Green CEO *Anne Currie* calls CBAM "the GDPR of green", because it means "you'll have to pay a hefty tax if you want any customers in the EU, which is a huge base of customers. If you want to survive, the future is green!"

Survival, savings, emissions reduction and more efficient developers… Green IT is not only dramatically better than the IT status quo, both for business and for the environment; it's also surprisingly easy and inexpensive to put in place. LVMH, for example, just trained its entire French IT department in green IT.

Could your company be next?

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