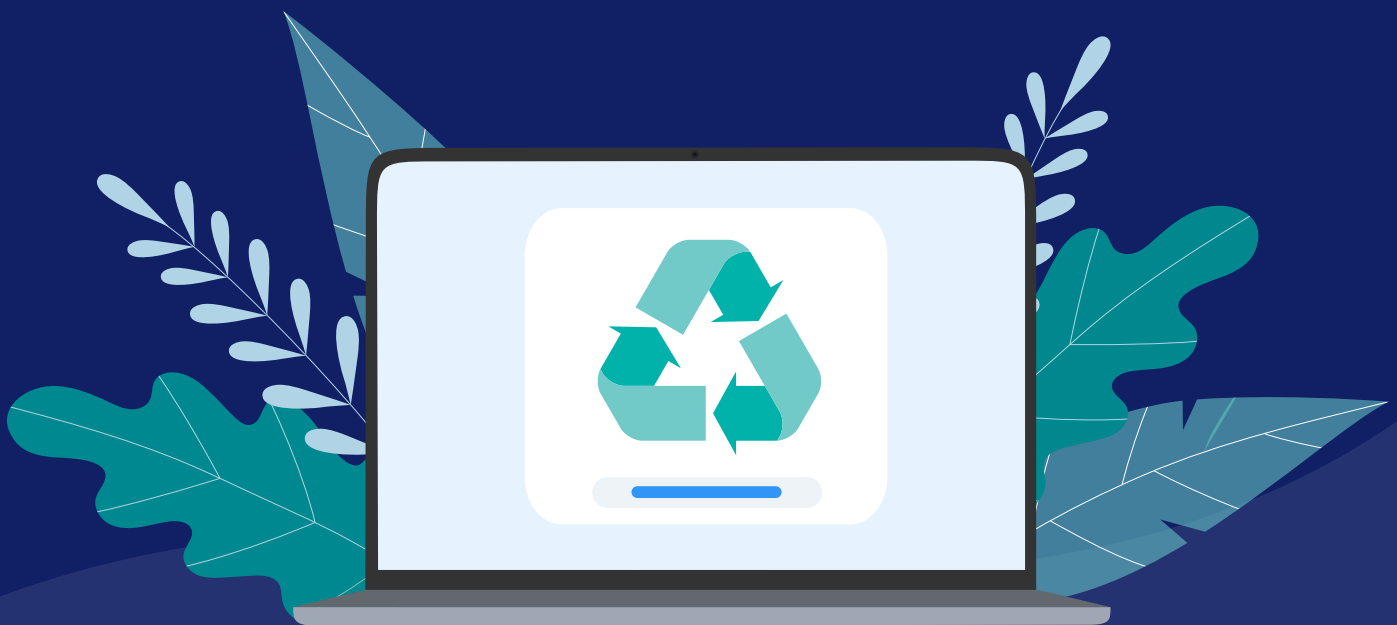


DISTRIBUTED MINDS:

Strategy Advice for Hardware Refresh & IT Sustainability





Introduction

The silver lining with the chip supply shortage is that it's forcing IT teams to take a hard look at their hardware lifecycle and make more sustainable decisions. Some learn faster than others, but exchanging work devices every year or two not only tanks your budget, it also adds to the growing e-Waste problem.

Much of the attention in the media has been cast on big tech companies like Facebook and Google for their role in producing (and curbing) e-Waste. 2030 is the marker that's continually referenced for companies and governments to commit themselves to a net-Zero target and embrace the ethos of digital sobriety.

But why not start right now?

There are several Green IT experts and use cases emerging today that you can follow and apply to your situation. To keep you up to speed, we've collected some of those expert insights and conversations in this unique Anthology. You don't need to sacrifice your Digital Employee Experience by extending the use of old laptops and desktops. In fact, these stories demonstrate that you can achieve both a strong (DEX) for your company and allow it to play a significant part in protecting the planet.



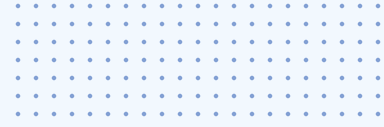


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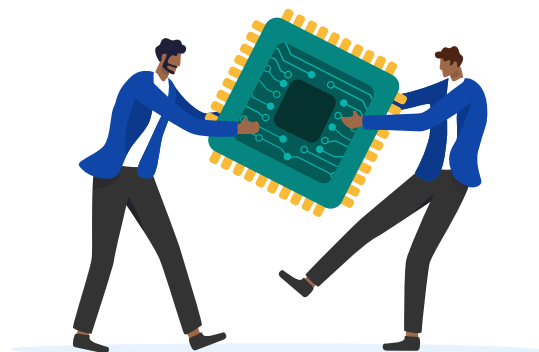




IT Beware: The Chip Shortage is Coming, Here's What You Can Do



Yassine Zaied
Chief Strategy Officer, Nextthink



According to CEOs of Intel, IBM, Cisco & other major tech companies, the current semiconductor chip shortage will impact price and availability of IT hardware for the next [12 to 18 months](#).

News coverage about the shortage reveals many factors impacting the production crunch, but there is one common underlying issue – many IT departments are updating their asset plans now based on unknown conditions.

The chip shortage backstory:

In early 2020, chip production plans were on track to meet existing run rates, including an anticipated surge in demand to support the 5G rollout for mobile phones and new use cases in auto and industrial applications. Then the pandemic triggered early shutdowns in dominant chip-producing regions, disrupting the global supply chain. And as people moved to remote work and e-learning environments, consumer behavior shifted to computer-based purchasing that placed additional strain on the already weakened chip supply.

And that's where we are today.

The reverberations are starting to hit important business sectors. For example, the shortage alone is expected to cost the automotive industry [\\$110 billion in revenue](#) by the end of 2021.

Buckle up IT, you're in for a bumpy ride if you don't switch gears now.

And as the pressure mounts and business leaders turn to IT for answers, you could (and should) find yourself looking at ways to extend the life of your existing hardware.

Let's be clear: this won't be a simple, straight-forward project. But replacing hardware (i.e. throwing away money) will be impossible given lead times and higher prices. So, it's time to sharpen your pencils and rethink your hardware acquisition plan so you can lessen the impact for what promises to be an expensive and difficult year (or more) to obtain new technology.

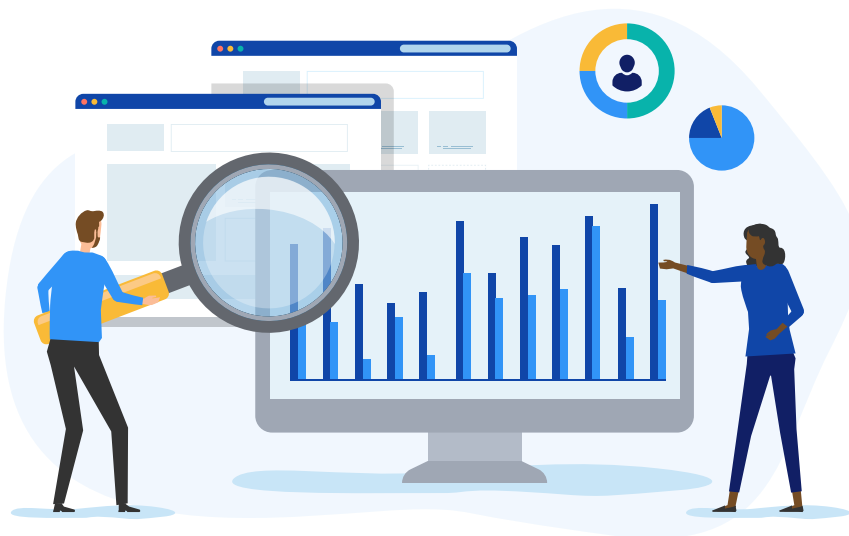
This might all sound depressing, but here's the good news

Refreshing your hardware can save your organization millions of dollars each year and maybe, just maybe, help stem the [74.7 million metric tons of digital waste](#) that experts are estimating we'll reach by 2030 (for context: in 2019 the world generated 53.6 MMT of e-waste).

We often assume that old hardware always equals inferior computing experience—wrong. This will be the first of two trademarks you'll read here first, but hardware ageism is a real thing (I'll let you decide which laptops are considered “boomers”).

If you retain anything from this article, let it be this: before you think about replacing your older devices, ask yourself, ‘can we reclaim these devices based on our employees’ computing context and needs?’.

READ MORE: [learn how the IT department at one hospital saved nearly \\$1M on unnecessary hardware upgrades](#)



Decision Time — reclaim your hardware based on facts, not assumptions

If you've been paying attention, I hinted in the beginning of this article that I'd make several unknown conditions, known.

Many IT teams are now trying to iron out their asset plans for 2022, but they'd benefit by thinking about the following conditions:

SOFTWARE VERSION & TYPE

- How old are the software versions your employees' devices? What applications are running, and are they impacting performance? What about applications that run at startup? Are any applications inadvertently taking up valuable resources and slowing the device?
- 'Software ageism' is a second trademark I'd like to coin (sarcasm). The difference though with 'hardware ageism' is that upgrading to a new software version almost always improves device performance and user experience.

DEVICE MEMORY

- How much data is left on your employee devices? Maybe their devices only require a simple memory upgrade (instead of being replaced all together)?

EMPLOYEE FEEDBACK

- What do your employees think about their devices and digital experience? Is your survey data reliable? Can you determine whether some devices are truly being used or not?

DIGITAL EXPERIENCE SCORING / INDEXING

- Can you accurately quantify your PC health, application health, network health, etc., all in one composite score or index? How do you know if employees are experiencing an optimal digital work environment or not?

You're Ready

There's no reason to throw away an accurate hardware (or software) asset plan when the chip supply chain rebounds.

Resist the temptation to fall back into bad habits like overprovisioning resources or playing the hardware-sizing guessing game. Pursue the questions listed above, and you'll have an asset plan grounded in actual performance and contextual data. And with a full-proof plan, you'll be able to deliver an excellent Digital Employee Experience and meet the demands of your business.



Burning Green - 3.5M PC's Show Heavy e-Waste in Corporate IT



Bharadwaj Rao
Principal Solutions Manager, Nextthink

Almost since the moment the world shut down at the start of the pandemic, we've heard what a blessing remote and hybrid work is for environmental sustainability. With fewer of us driving and flying for work, it can feel like hybrid work is the sustainable solution we've dreamed of for so long.

Yet at the same time, attention is also being cast on big tech companies like Facebook and Google for their role in producing (and curbing) e-Waste. 2030 is the marker that's continually referenced for companies and governments to commit themselves to a net-Zero target and embrace the ethos of digital sobriety.

We're moving forward into a world of hybrid work, and we hope (and need) it to be sustainable. But you might be wondering --

What about little old you and your IT department?

Surely there's something IT can do to both save money and lighten the indelible carbon footprint we leave behind each time we logon to work?

To help IT leaders discover how they can make remote and hybrid work more sustainable, my team and I set out on a fact-finding mission by analyzing around 3.5M anonymous customer devices (this sample size was taken from an initial trial period with Nextthink).

Here's what we uncovered:



What percentage of old hardware (+3 years old) is salvageable?

First, it's worth mentioning that your inventory is unique to your company, but that being said, we think there's a huge cost savings opportunity here for any IT department - so maybe don't throw away those old laptops and desktops just yet.



We found that only **2%** of old generation devices (+3 years old) should be replaced with new hardware.

Source: [Nextthink Insights. Understanding Startup Time Across 3M Devices.](#)

We found that just 2% of the devices we analyzed needed to be replaced with newer models. And 20% of devices returned a strong enough Digital Employee Experience Score that they could be left alone. A strong DEX Score means that the devices returned high employee satisfaction ratings, a fast startup time, high CPU power, and a host of other strong performance metrics. Initially, the remaining 80% of old devices appeared to malfunction for various reasons, but upon closer review we found this subgroup could be fixed with a simple RAM upgrade and some configuration changes.

How much can sustainable hybrid work solutions save a company?

Brace yourself.

Let's imagine that instead of investing time into revitalizing older hardware, you decided to charge ahead and make a wholesale upgrade.

Most corporate IT departments support thousands of devices so let's say you want to replace 40,000 PCs. If you were to upgrade these devices with one of the newest HP models (around [\\$2,000 per device](#)) versus an upgrade cost of say, \$200 (factoring in RAM upgrades or configuration changes), that investment would ultimately cost you \$80 million versus just \$8 million.

That's a potential savings opportunity of up to \$72 million for your organization.

We recognize that sometimes it's necessary to upgrade your employees' devices, but there's clearly a cost savings opportunity here.

In addition, the industry you work in also plays a huge factor in all of this. We dug a little further and found that certain work industries, like the [Consumer Goods sector](#) had devices with a high hardware savings potential while others, like the Financial sector, had the worst.

Is there a single IT issue that contributes to an enormous amount of energy (and productivity) loss?

First, let's take our research findings out of the picture for a moment. There are in fact, thousands of small micro-actions IT teams can make starting today which will save their companies millions of tons in CO2 emissions and make hybrid work more sustainable.

For example, [Rainer Karcher](#) (Global Director, IT Sustainability) at [Siemens](#) has carved out several simple but effective eco-friendly measures with his team and the employees they support.

We took inspiration from Rainer's work and wanted to see if we could identify a lone variable that heavily impacts productivity loss and energy emissions. It turns out that of the 3.5 million devices we analyzed, 34%

averaged a painfully slow startup time (+5 minutes). Not only is this an annoying way to begin your workday, this wait time equates to about 450 tons of CO2 emissions per year. But we found that what prevented those devices from starting up faster could be fixed with [some simple IT repairs](#).

How does employee software and internet consumption impact the environment?

Employees today use dozens of standard and non-standard applications and plug-ins—that's a fact of modern work. But what you don't hear much about in the news is how employee usage impacts the environment.

From our sample we found that collectively, gaming, personal communication, and media streaming apps generate about ~33 tons of CO2 emissions per year. To put that into perspective, it would take [300 trees an entire year](#) to absorb those emissions from the atmosphere.

And as you might guess, certain industries account for higher e-Waste consumption than others. For example, devices from the Nonprofit & government industry recorded the highest usage of Gaming applications by employees. How an employee uses their work device directly impacts how sustainable a corporation can be.

Personally, I think focusing on whether employees should or shouldn't be gaming on their work devices or listening to say, Spotify, misses the point. The lines between work and home life are blurring, but what's salient here is that IT can help inform and educate employees on how much their computing habits impact the environment.

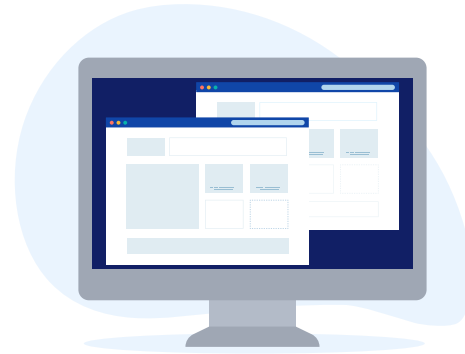
And any C-Suite leader that takes their CSR (Corporate Social Responsibility) or ESG (Environmental Social Governance) initiatives seriously should want this type of data. It's only a matter of time before we see companies enact full-fledged Green IT training program for employees. In the early 00s, cyber security wasn't taken very seriously at work, and now it's embedded into every company's onboarding program. I think the same will happen for employees and Green IT projects, and I hope research like above will help support those efforts.



Darker Backgrounds, Brighter Futures: Siemens' Real-World Green IT



Rainer Karcher
Global Director, Sustainability, Siemens



Have you ever heard the phrase “greenwashing”?

It refers to those companies and organizations that talk a good talk environmentally – but often walk in a different direction altogether.

At Siemens, though, we’re trying, really trying, to be green inside and out. Want proof of this (you should)? We’re firmly committed to achieving net zero carbon by 2030 for scope 1 and 2 and by 2050 for scope 3 emissions. This means analyzing everything we do, and thinking how we can effect changes that can help us reach that goal.

And an absolutely key focus of all this is of course Digitalization – and [ensuring that our IT services are green](#).

At Siemens today, this is a key part of our **DEGREE** framework (**D**ecarbonization, **E**thics, **G**overnance, **R**esource efficiency, **E**quity and **E**mployability), which clearly sets our sustainability priorities at Siemens.

Here’s an introduction to what we’re doing in green IT, and why...

Green IT Primer

Unfortunately, the world’s love affair with digital, both in and outside of the workplace, has a significant [environmental impact](#). The good news is that, small workplace actions, such as properly shutting down your laptop when you’re not using it can result in huge improvements if extrapolated across thousands or millions of devices every day.

On the most fundamental level, these improvements can be achieved through better communication and education. There are also, however increasingly sophisticated ways of encouraging and ultimately empowering employees to adopt greener IT practices.

Imagine – to return to that first example – that you had left your laptop on standby for three weekends in a row. Now imagine a friendly, unobtrusive pop-up that didn’t simply inform you of this, but also pointed to what the impact of that might mean to the environment, and your own professional carbon footprint...

Green Digital Dashboards

Just as our IT teams use dashboards detailing the factors affecting IT experience, at Siemens we are also developing ones that show individual users how their software, hardware, and digital habits ultimately [impact their carbon footprint](#).

The aim is to illuminate the low hanging fruit, the small behavioral changes that can make an individual a more responsible consumer of IT. It could be something as simple as using darker backgrounds in a PPT, which consume less energy than light backgrounds. A tiny action that, again extrapolated across thousands or millions of users, can make a genuine impact.

Similarly, we’re enhancing our IT ordering portal so that users can see the environmental impact of their purchasing decisions and options, as well as the features, benefits and price.

Green Vision

Implementing small, measurable, constant improvements, and giving access to a baseline against which to measure progress, is a key part of green IT as well as modern IT in general. And both require greater visibility into IT consumption. For green IT, of course, what we're primarily seeking is [visibility](#) into how that consumption translates into carbon emissions, and how it can be improved.

This visibility is something we're continuously building out at Siemens. This requires the participation and expertise of countless stakeholders, and a general willingness to share knowledge and insights for the common goal and greater good.

This collaboration is very much a work in progress at present. It remains difficult, for example, to know what specific carbon emissions are related to Office 365 services – such as a one-hour Teams call (and yes it's the same for Zoom). As long as we're all working with the same goals in view though – companies like Siemens, as well as software and hardware vendors together – we'll get to where we need to go.

Green Targets

Cyber security provides an interesting point of comparison, and a model for progress. Think back just ten years, when few employees gave cyber security a second thought. Now, it's mandatory annual training at many companies. At Siemens, employees get reminders when the time comes to refresh their cyber awareness, and full support in doing so.

Similarly, green digital employee engagement can be further enhanced through strategies of positive reinforcement: for instance, targets which are a part of individual [KPIs](#). Every company has a bonus system of some kind, with rewards and remuneration tied to a set of specific achievements and goals.

Here too there is potential for IT to not merely provide better measurement and insight into consumption, but to prompt, nudge and encourage people towards achieving those agreed-upon aims.

We see the potential 'gamification' of green digital employee engagement as an exciting, positive avenue that could complement this goal-based approach, and help the collective transition to greener IT habits – such as using IMs more than email and linking to shared files in favor of sending attachments.

Green Futures

In IT today, there is a strong trend towards encouraging employees towards greater ownership of their digital experience. And it's the same in green IT.

In both cases, however, the onus of responsibility will lie with IT itself. And the greater transparency IT teams have into user consumption, needs and context, the more effectively and securely we'll be able to make responsible environmental decisions without having to be concerned about unnecessary impacts on different employee needs.

This is where personas can have a key role going forward. Knowing what technology individual employees really require to do their jobs, for example (rather than having to make assumptions about entire user populations) can help IT manage things like the hardware lifecycle with greater environmental efficiency.

Ultimately, achieving greener IT practices within organizations has to be a collaborative process, not only involving all the internal stakeholders, but vendors and partners also.

In this it's the same as the wider challenge presented by the climate crisis: we're all in it together, but in order to come together to solve this existential problem, we must seek to better understand the wider context in which we live, work and consume resources.





Nutritional Labels for Hardware? Believe It.



Samuele Gantner
Chief Product Officer, Nexthink

The turbulence of 2020 and increased remote working has meant that many businesses across the globe have been forced to make sudden and significant investments in hardware devices to support the working needs of their staff. Hardware companies like Apple, HP and Dell have been [seeing a surge in personal computing/device sales](#) to the point of [shortages in the market](#).

Device refresh cycles in an organization typically occur as a one-size-fits-all approach where the company chooses a laptop model that everyone receives. And while equipping employees with the necessary hardware to do their job is important, investment in assets such as hardware is a big outlay for companies in the current financial climate. When organizations can “right size” physical and virtual device deployments based on employee requirements, they stop overprovisioning and overspending. If hardware is performing sub-optimally, then the potential of poor employee productivity and expenditure on device replacements could be costly.

To try and prevent these issues from arising, organizations are creating new labels for devices to increase awareness for consumers. Carnegie Mellon University has implemented labels for [device security](#) that are similar to the nutritional labels used on food packaging, which would allow consumers to understand the key performance and security capabilities of a piece of hardware before they buy.



Ensuring that hardware is secure and efficient is important, but if the software staff use on their devices is not working, then the health of the hardware becomes obsolete. So what does software performance management look like, and how does tie in with the trend of nutritional labels for tech?

Measuring Software Performance

The good news for businesses is the trend for labelling, monitoring and analyzing technology does not stop at hardware. Once a business has assessed the health of its hardware, the tools are now out there to do the same for software on an ongoing basis.

Managing the tech operation of a large enterprise is a demanding task for any IT team at the best of times, but it can be made even more challenging when contending with remote working. Research from [Nexthink](#) released in April 2020 found that [just 55% of tech issues are flagged to IT](#), which means nearly half go unreported. Not only does this hinder the IT team’s ability to see what is causing any issues, but it means employees spend their time trying to solve their own tech problems – impacting productivity and costing companies money.

The threat of shadow IT and a DIY approach to tech management is a concern for IT teams as they look to optimize IT performance levels. That's why gaining a holistic overview of the entire network, while having the ability to gain insight into individual devices and the operation levels of its respective software is invaluable.

The ambition to understand more about how well employees' tech is functioning has led to the creation of tools that label different aspects of a device's software performance. IT management solutions now exist with the capability to analyze and even score the performance of different facets, including applications, software security, web browsers and collaboration tools, in one dashboard. Grounded in hard data and combined with end-user sentiment, these labelling systems let IT teams know how well software is performing with a score out of ten, making it easier to identify where the pain points are, and how staff feel about their digital experience. From there, IT practitioners can be empowered to proactively and reactively solve software issues to help ensure tech runs smoothly.

A Strong Digital Experience for Employees

For a long time, people have had to accept a chasm between the personalization they get from their tech as a consumer and what they receive as a worker, but that too is changing. IT staff now have the tools available to tailor software requirements by persona, basing it on the traits of how employees use their software and the feedback they provide. This means IT teams can assess the usage of certain applications by individuals, create a relevant persona and use that to decide how they rollout future tech changes for different groups of workers so it is specific to their needs.

As remote working becomes more common, for many end-users, their device and the tools they use on it are their work. Having a poorly-functioning device has always been problematic for staff, but that is only heightened in the current climate. If employees cannot work effectively through their technology in the current climate, then in many cases they cannot work at all – and this will impact their business output and happiness in their role.

A worker's device is only as good as the software on it. If businesses want to ensure their investment in hardware is worthwhile, they'll need to make sure employees are as productive as possible and that their software is running smoothly. The best way to do this is to open up a dialogue between IT teams and staff on IT performance. That way, IT professionals can use this feedback as part of their diagnosis when reviewing the entire network on a single dashboard and can proactively improve performance as a result. Labelling and scoring the performance of both hardware and software will help to create a positive digital experience for employees while helping companies to be productive and cost-efficient.



This article originally appeared in [Information Age](#).



Comparing IT Hardware Waste to Car Emissions



Ron Werling
Senior Managed Services Consultant, Nexthink



Ahmed Adham
Senior Managed Services Consultant, Nexthink

If you mentioned the words “Green IT” to tech support twenty years ago you probably would have been met with a blank stare.

Climate change always felt like a conversation for somebody else—not those in charge of resetting our passwords or installing Office.

But while innovations in cloud computing and business applications have helped IT cut infrastructure costs and remain competitive, that progress has come at an environmental cost. Advancements in software still require serious energy from hardware—and that’s where the IT industry has dropped the ball.

Cloud services require significant power from data centers, which currently generate 2% of all global electricity and will likely reach **8% by 2030**. And sometimes just maintaining software can be unnecessarily wasteful—Bitcoin for example, takes more energy to maintain than the **entire nation of Switzerland**. By 2040, the IT hardware sector (PCs, laptops, monitors, smartphones and servers) will account for **14% of the world’s carbon footprint**—up from 1.5% in 2007.

Yet thankfully, some IT Leaders are starting to recognize the role they play in all this and they’re trying to do something about it.



Thinking Differently About Green IT

Since last year, we’ve helped one customer analyze their work devices (laptops and desktops). They discovered that since September 2020, their devices have consumed 18.96 billion Watt hours (Wh), and released 7.58 billion grams of CO2 emissions.

In only a few months, those devices released the same amount of CO2 emissions that 1,650 American cars would in a single calendar year!

By leveraging Nexthink’s experience dashboards and integration with PowerBI, our customer’s IT department was able to identify which regions consumed the most power and released the most CO2 emissions from their devices.

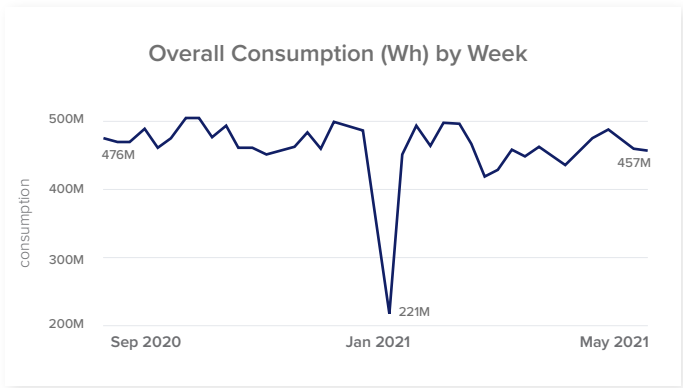
How did we arrive at this information?

First, some key terms:

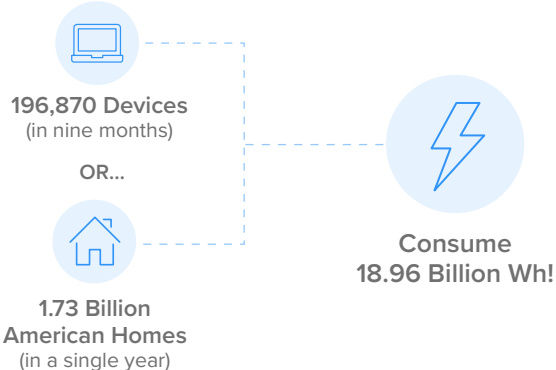
- **Uptime** - The amount of time that a device has been active and running.
Calculation: $ms/1000 = s/60 = h(\text{Round } 2)$
- **CO2 Emissions** – The amount of kilo-grams (kgs) of emissions produced during the consumption of kilo-Watt hours (kWh) by devices. Based on an industry standard, we are assuming that for every kWh, 0.4kgs of CO2 are produced.
Calculation: $[\text{Consumption}] * 0.4$
- **Consumption** - We are assuming that a desktop uses 100 watts and a laptop used 50 watts. These approximations are multiplied by their respective uptime to gather the consumption of each device.
Calculation: $\text{If } [device_type] = \text{"desktop"} \text{ then } [uptime]*100 \text{ else } [uptime]*50$
- **Screen Time** – The amount time employees spend using their devices via keyboard and mouse interactions. In the following dashboards, this is measured in hours (hr).

Hardware Consumption = 18.96 billion Wh (Sep 20' – May 21')

By focusing on device Uptime as a starting point, IT was able to infer how much energy the company's laptops and desktops consumed and identify which regions were bigger energy consumers than others.

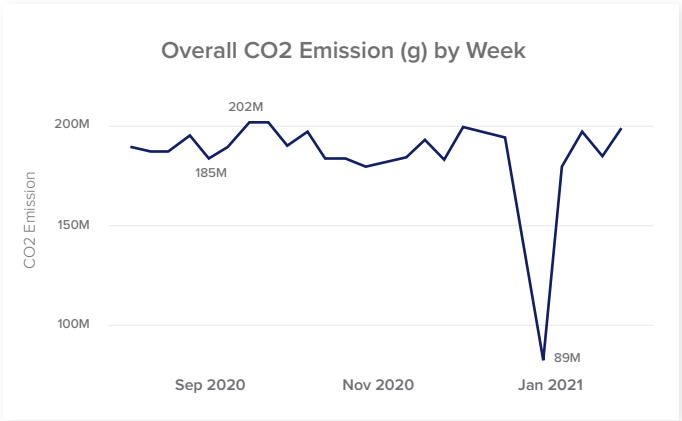


Comparing this information to the housing industry, we were able to infer that these devices consumed the same amount of power as approximately 1.73 billion American homes do in a single year (*the average annual consumption for a home in the U.S. is 10,972 kWh!)



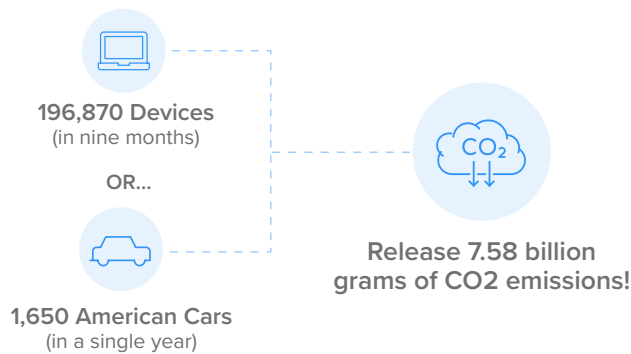
Hardware Emissions = 7.58 billion grams of CO2 emissions (Sep 20' – May 21').

With Nexthink's device dashboards and integration into PowerBI, the IT team could trace their device emissions over time and drill down into specific regions and employee personas. Notice the big spike in emissions during the first few weeks of September—a likely result from many remote employees returning to work after vacation. And the big drop off in early January is from workers going on PTO for the Holidays.



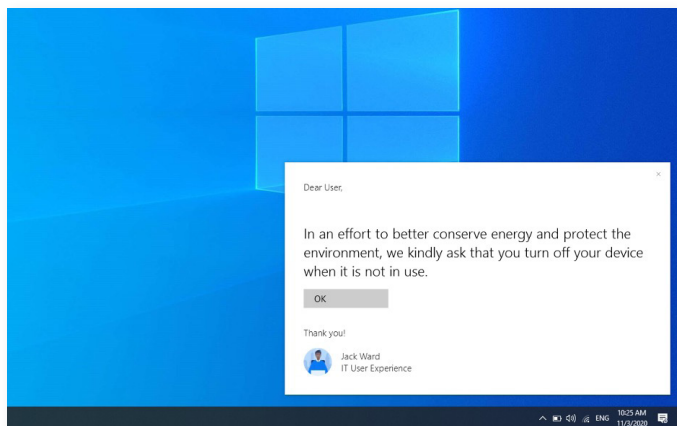
We also compared the company's hardware emissions to the vehicle industry to help the IT department contextualize their carbon footprint.

A typical American passenger vehicle emits about 4.6 metric tons of CO2 per year. This assumes the average gasoline vehicle on the road today has a fuel economy of about 22.0 miles per gallon and drives around 11,500 miles per year. We found that the company's devices released the same amount of CO2 emissions (7.58 billion grams) as approximately 1,650 American cars do in a single year!



How Can IT Reduce their Carbon Footprint? Smart Automations & Employee Feedback

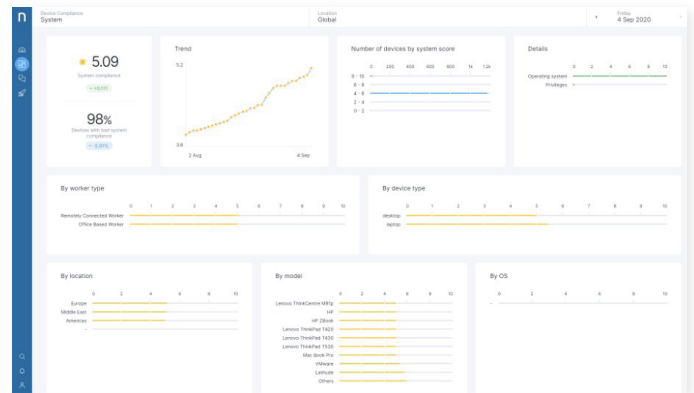
Currently, this customer's IT department is using Nexthink's automations and onscreen employee communications to help cut unnecessary hardware waste. For example, many employees inadvertently leave their devices running overnight. IT uses Nexthink's Engage capabilities to contact users directly and remind them to turn off their devices when they're not being used.



Knowing that sometimes devices need to remain on for things like Windows updates and other software/configuration changes, Nexthink helps IT identify which devices can be automatically powered off or set to sleep mode.

How is this possible?

Our platform gives IT visibility into exactly which devices (remote or in-office) are current or outdated.



And with Nexthink's library of built-in automations, IT can quickly power down any device (or set to sleep mode) without any disruption to employees.

Name	Priority	Active	Created	Active last time	Last modified	Last run time	Last run type
CHK006	10	172.8.188.2	41.6A2C	00:17:00Z @ 08:48:00 AM	00:17:00Z @ 08:48:00 AM	21 days	Success
CHK007	10	172.8.181.27	41.6A2C	00:17:00Z @ 07:23:00 AM	00:17:00Z @ 07:23:00 AM	12 days	Success
CHK008	10	172.8.178.68	41.6A2C	00:17:00Z @ 08:02:00 AM	00:17:00Z @ 08:02:00 AM	21 days	Success
CHK009	10	172.8.178.18	41.6A2C	00:17:00Z @ 07:52:00 AM	00:17:00Z @ 07:52:00 AM	20 days	Success
CHK010	10	172.8.184.44	41.6A2C	00:17:00Z @ 08:47:00 AM	00:17:00Z @ 08:47:00 AM	20 days	Success
CHK011	10	172.8.181.73	41.6A2C	00:17:00Z @ 08:04:00 AM	00:17:00Z @ 08:04:00 AM	19 days	Success
CHK012	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK013	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK014	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK015	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK016	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK017	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK018	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK019	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK020	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK021	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK022	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK023	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK024	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK025	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK026	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK027	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK028	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK029	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK030	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK031	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK032	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK033	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK034	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK035	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK036	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK037	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK038	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK039	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK040	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK041	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK042	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK043	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK044	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK045	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK046	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK047	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK048	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK049	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success
CHK050	10	172.8.188.17	41.6A2C	00:17:00Z @ 08:20:00 AM	00:17:00Z @ 08:20:00 AM	20 days	Success

Connecting the Dots – IT's Impact on the Environment

We are now helping this IT department to set clear environmental targets and to understand how their efforts can reduce their carbon footprint.

The formula is quite simple:

Theoretically speaking...

If we were to reduce our Uptime(hr) and reflect that change throughout the sum of Consumption and CO2 Emissions

$$\begin{array}{ccccc}
 45.76 & - & 22.21 & = & 23.55 \\
 \text{Current Median of Uptime (hr)} & & \text{Current Median of Screen Time (hr)} & & \text{Potential Savings Opportunity}
 \end{array}$$

We would also be able to...

Reduce the total consumption per year by: OR Reduce the total CO2 Emissions per year by:

17.84
Potential Homes Saved Annually

17.02
Max of Saved Cars

**Above calculations are approximations. Fixed values are used for the number of devices.*

Consumption Reduction Calculation:

$([\text{Potential Savings Opportunity}] \times ((137820 \text{ Laptops} \times 50 \text{ Wh}) + (14210 \text{ Desktops} \times 100 \text{ Wh}))) / 10972 \text{ Wh/home annually} = \text{Potential Homes Saved Annually}$

CO2 Reduction Calculation:

$([\text{Potential Savings Opportunity}] \times ((137820 \text{ Laptops} \times 50 \text{ Wh} \times .4 \text{ g}) + ((14210 \text{ Desktops} \times 100 \text{ Wh}) \times .4 \text{ g}))) / 4600\text{gs/Cars annually} = \text{Potential Cars Saved Annually}$

By thinking in comparative terms (i.e. hardware to vehicle emissions) like above, technology leaders can broaden their understanding of Green IT initiatives and better control their environmental impact.

IT's work doesn't end with employees anymore, much like it did twenty years ago. Now, tech teams have a chance to expand their role and provide smart solutions that will protect our environment.



Download the Green IT Library Pack, [here](#).

Hardware Lifecycle



Barbara Matoe
IT Sustainability Expert

Below is an excerpt taken from the DEX Show – a podcast for IT Changemakers.

Can you explain IT's role in sustainability and how you made the decision to extend the lifecycle for your company's devices?

BARBARA MATOE:

So we had an additional scrutiny that we put over the device and the models available. In a lot of organizations you'll find that people like to go for the bright, shiny, new computer. Looking at supply chain issues, you would have to organize with your supply chain, was there a supply chain available for a device before you would even publish that device as available for use in your organization?

I looked at the data available. I looked at what the fleet usage was, and then I delayed publication of new devices, new models, until our buffer stocks had been used up, because knowing there were supply chain issues, I made buffer stock arrangements with our vendors, so that we could draw down on that, and it smoothed the hump of the supply chain. But using up your buffer stock before you went to the bright, shiny, new computers, and making sure you validate your supply chain and it's working before you let people procure the devices, and also monitoring how many of the devices were in use for those users.

Do you have a specific business case you can share as an example?

BARBARA MATOE:

So we did have an example where we introduced, and it was a couple of iterations ago, iPhone 12, which cost \$1,400 in Australia, to our users, and a user procured one via the internal services, and within two weeks, procured another one. And I went back and I said, "What happened to your old one?" He goes, "Oh, I broke it," and I went, "Okay, so it's two weeks old. We could repair it," and he went, "Oh no, I bought a new one. He couldn't wait!"

It's that type of wastefulness that I was looking to mitigate, and by monitoring your supply chain, by monitoring what you had in use and who had it, I could ask those questions. If somebody ordered 10 of something, "Okay, have you got a new blocker user?" By using the data and proactively monitoring what devices you had in play, and we had a fair few. We're not the biggest organization, but when you're talking a few thousand laptops, a few thousand mobile devices, and then you add on top all the other devices that come with that ... iPads et cetera, it adds up. You can make small changes that can have quite a positive impact.

We still had to upgrade our operating systems to stay current. We did targeted upgrades of the hardware devices themselves, and used Nextthink data to understand the use of the device. How were employees using it? were they? Their role? And that led to both hardware and application-based usage information that we could understand the true impact of the device.

From that information we paused our refresh program. So with people working from home, devices in Australia... I'm not quite sure if everyone's aware, but Australia's a pretty big country, and to refresh a device, we would have to courier it to their house and that's not cheap. So when we looked to refresh somebody's device, we did it for a darn good reason, factoring in the supply chain of the devices, the refresh activities, and those users were prioritized. We upgraded devices due to RAM issues and we upgraded our primary collaboration tool three months into lockdown.

Can you tell us about your “hibernation policy” and how it links technology and employee experience?

BARBARA MATOE:

Our hibernation policy directly contributed to extending the battery life cycle of the device.

So from a Green IT, as well as an asset refresh perspective, it was a win-win because it was extending the battery life of the devices. We reviewed who gets the device and why? So role-based device and personas is quite important, really, because from a persona, you really understand who needs what and why, and you can appropriately assign and allocate the devices to them, and also really manage your current fleet without having to go to new, and it mitigates the impact of the supply chain, quite frankly, because if you're making sure you are optimizing your existing fleet, it has a financial benefit, a performance benefit, and it's actually greener, so that's part of my Green IT agenda.

And we actually tied the device health to human health. We decided we want to make your devices as healthy as possible for you. So the Hibernian Policy would kick in if you were away during the day, et cetera, but at the end of the day, how about you log off? Or shut down your machine and turn off the power switch? That is your trigger to go be you after work, so you could focus on your wellness. You could focus on separating work and life, because when you're working in your home, people weren't actually walking away. We provided that mental trigger. Shut the lid, turn off the power, you are now you.

It seems like you were able to get hold of invaluable data, but how did you communicate upcoming changes with employees?

BARBARA MATOE:

We made sure that they (employees) knew what we were doing and why, and we changed the language that we were using with users, because users at the end of the day, they'll get email after email from IT, and they'll just go, “Lost in the wash.”

We used our internal social media platform. We used Nextthink popups. We used it for a number of reasons, but also you could use targeted campaigns for Nextthink popups, to let people know what was happening and when and why, in a salient message, not IT-speak, but normal language, so that we can make it clear to everybody that say, we were only replacing the devices where it was necessary, because users become attached to it.



Listen to the full show, Out with the New w/ Barbara Matoe, [here](#).





The Green IT Tier List



Rainer Karcher
Global Director, IT Sustainability, Siemens

Below is an excerpt taken from the DEX Show – a podcast for IT Changemakers.

What are the costs (financial and none) that come with digitalization and remote work?

RAINER KARCHER:

Well, I think in the beginning of the pandemic, we heard people say that climate conditions will improve because of less air travel and traffic in and out of work. But unfortunately this is not the case.

Due to the pandemic, streaming at home massively exploded. A lot of people stuck at home are making use of physical or virtual now in instead of physical and this is, I think, having a huge impact. In 2020 the amount of energy consumed worldwide on data centers increased by 40%.

And everywhere energy is consumed, it requires some kind of production of energy and unfortunately, not all data center providers, not everybody who is making use of any kind of digital services is already on renewable energy purely. So that is one of the effects.

Talking about financial costs (of digitalization), I mean everybody is quite well aware of bitcoin and cryptocurrencies. So there is nothing physically produced, there is nothing you can take into your hands. It's completely virtual. The amount of energy which was used for the mining of Bitcoins in 2022 was the same amount that Switzerland used as a whole country during the same time. I'm not blaming bitcoin now, so please don't get me wrong. It's just an example.

The point is that the more we digitalize work, the more we get into Green IT, the more we need to pay attention to this topic (and our energy waste).

What would you suggest to fellow IT professionals interested in becoming more green?

RAINER KARCHER:

It's important to have a starting point – to understand daily usage. So one thing we use is what's called a Green IT tier list. This consists of a series of vertical columns. At the bottom you have "D" and that would be the worst, the lowest grading, and up you go to "C," then "B," then "A," and "S."

Help us understand this rating system then, what would you consider a poor versus strong Green IT case?

RAINER KARCHER:

"S" would be the very best score – superb. To give you a sense how we'd score user behavior and IT performance, let's start at the bottom.

D – Somebody with a "D" score is a person who keeps their hardware (laptop, smart phone, tablet) running all day long. This person exchanges for new hardware every year or two. They send heavy email attachments (instead of smaller pictures or linking documents via SharePoint).

Contrast this to "S," this person makes use of smart browsers and plug-ins that track e-Waste usage. This person makes a concerted effort to extend their hardware to several years, they care about refurbishment and the circular economy (proper hardware recycling). Someone with an "S" rating would also become an advocate for IT, they'd help train colleagues and share energy saving tips, they'd share documents on cloud services instead of heavy email attachments.



Listen to the full show, The Green IT Tier List w/ Rainer Karcher, [here](#).

Nonprofit's Hardware Strategy Saves \$400K



Terry Brown

Director, Global IT Service Delivery, FHI 360



Len Curry

IT Manager, FHI 360

FHI 360 is an international nonprofit working to improve the health and well-being of people in the United States and around the world. They employ more than 4,000 workers in 60 countries and partner closely with governments and the private sector and civil society to bring about lifesaving health care, quality education, and social change opportunities for meaningful economic participation.

And like any organization (nonprofit or for-profit), they rely heavily on high-performance technologies—laptops, desktops, and mobile devices—to assist workers both in the field and in the office.

When the chip shortage first started to impact supply chains, the IT team at FHI360 had to quickly pivot and find a way to extend the lifecycle for most employee devices without jeopardizing their digital experience and efficiency.

By taking a digital-experience-first strategy, they were able to save nearly \$400k from purchasing new hardware and divert their investment instead towards a cheaper (and smarter) RAM upgrade, extending device lifecycles.

I sat down with Len Curry (IT Manager) & Terry Brown, Director, Global IT Service Delivery at FHI 360 to ask them how they managed to pull this off.

What type of pressure was your team under to find a solution during the chip shortage?

LEN CURRY:

A lot of employees were looking for more powerful machines, running Power BI, Azure, etc. But we didn't have the budget to purchase high-end machines that cost \$3k – \$5k for every employee—that was simply out of the question. I was wondering, how could we address the impact and be good fiscal fiduciaries of the budget for our non-profit.

Unlike the private sector, we don't take the approach of replacing hardware as soon as the warranty is up, that's not cost-effective at all.

Luckily, our vendor gave us a heads up early in the pandemic that the chip shortage was going to impact future supply chains and the availability of new equipment. We had a unique situation where we had some budget remaining in the final months of the fiscal year that we needed to spend. So, part of it came down to our strong relationship with our vendor, and part of it came down to us isolating exactly which laptops needed to be replaced and what devices we could still salvage and provide a strong UX for employees.

Wait—how did you get your hardware purchase order approved so quickly? For most organizations, this can be a real pain!

TERRY BROWN:

Our CIO is driven by making decisions based on actual versus assumptions. Using Nextthink's platform we were able to find that the offending factor impacting hardware performance came down to core count. We had the visibility to see that higher cores had lesser CPU utilization and relatively few cases of BSODs (Blue Screens Of Death), etc., and the data to back up our findings. This revelation saved us a huge amount of time and headaches and helped kickstart our strategy.

READ THE REPORT: [Learn how processor speed & CPU core count impacts device startup time](#)

I also found that some machines simply needed more RAM (16 Gig to be precise) to perform better. After setting up a few stress tests, I was able to approach management with a solid hardware refresh plan.

We decided to stagger our purchase with some new hardware with the additional core configuration before the end of the year (and before the chip shortage really started to impact us), and in parallel, we'd approach several hundred users to install additional RAM (extending the performance of their current hardware).

What was the investment breakdown, new machines versus extending your old hardware?

LEN CURRY:

So, our plan wasn't to take one versus the other but to apply both strategies, selectively. I created a cost avoidance tracker tool, which currently reflects just under \$400k is hardware cost avoidance and savings. If we didn't review our current situation carefully and given the challenges of the chip shortage, all of that money would have been spent on new machines versus the \$60 investment on a stick of RAM per computer.

We are happy that we've been able to extend the lifecycle for most of our hardware, for a fraction of the cost of buying new equipment.

What's the shelf-life currently for the average FHI 360 computer?

TERRY BROWN:

Right now, it's probably every 4 – 5 years. We really push it to at least five years if at all possible, and with the new configuration update with the additional core count, we're aggressively looking into extending our hardware lifecycle to six years.

We just received the last 400 machines that we ordered in July, at the end of the year. It's a good thing we were able to extend a good portion of the devices in our environment with the extra memory to address immediate performance issues.

[Tossing away old hardware? We found that only 2% of old hardware needs to be replaced](#)

The goal is to introduce more 8-core machines, which only cost us an additional \$175 when we moved from four cores to eight, which helps us future-proof our hardware purchases. Even today, not all these cores are being used. Most apps need 3 or 4 cores to perform well, but we're more strategic now about when to spend big on a new computer and when and how to get more performance out of older devices with less costly updates.

And I think our story is applicable for anyone in IT—not just the non-profit sector. The silver lining in all this is that yes, we've saved money, and while it wasn't our original intent to be greener, we're happy to also play a small but important role in being more sustainable, and that's something every technology professional should take seriously.

ABOUT NEXTHINK

Nextthink is the global leader in Digital Employee Experience management. The company's products allow enterprises to create highly productive digital workplaces for their employees by delivering optimal end-user experiences. Through a unique combination of real-time analytics, automation and employee feedback across all endpoints, Nextthink helps IT teams meet the needs of the modern digital workplace.



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