PLANET, PEOPLE AND PRODUCTIVITY

Justin Sutton-Parker reveals how thinking 'Px3' can help slash IT emissions

Anthropogenic interference has caused 1°C of global warming. A further increase to 1.5°C will be reached between 2030 and 2052 if emissions increases continue at the current rate.

Scientists have calculated that achieving net-zero global emissions by mid-century may halt global warming on a multi-decadal scale, causing temperature gains to begin to peak.

To realise this goal, we can't rely solely on key greenhouse gas (GHG) abatement strategies, such as vehicle electrification and renewable energy transition, as we wouldn't be able to adopt them fast enough to bridge the projected 32Gt CO2e annual emissions gap forecast for 2030.

The United Nations Environment Programme (UNEP) suggests that to bridge the gap, the world must combine existing technology with innovation to drive behavioural changes that could reduce societal emissions.

ACTING ON SUSTAINABLE IT

For many years, my research has focused on the role IT can play in the behavioural changes that would slash emissions. My MBA defines cloud computing as a driver for corporate and social responsibility and my PhD research develops new approaches to quantifying IT-related GHG emissions.

As most sustainability researchers would agree, the joy of proving theories begins when people use the findings to make an impact that supports a wider cause. That's why 10 years ago I adopted a life goal to remove the GHG emissions equivalent of 100,000 cars from the atmosphere by 2050, through the diffusion of sustainable IT.

This goal was accelerated when I co-founded Px3, a research-based consulting organisation that specialises in sustainable IT. Where most companies set financial goals, ours strives to create a sustainable future by safeguarding the environment. My personal goal is now our company goal.

The timing is good, as change is now urgent. In context, my research paper for SEIT 2020 determines that IT-related activities create 5% of global GHG emissions. That means a forest the size of Canada and Greenland is required to sequester the pollution created by the way we work today.

THE FOUR STEPS TO SUSTAINABLE IT

To reduce this footprint, Px3 consults throughout the 'IT Channel'. This ecosystem includes hardware manufacturers, software vendors, distributors, marketers, IT resellers and end users. The idea is that if Px3 can positively influence human behaviour at multiple points, then people will be enabled to act in concert and bridge the gap.

What we do behind the scenes is complex, but the message is straightforward and can be reduced to four simple steps. They involve identifying and adopting low-emission devices such as tablets and notebooks; encouraging IT-enabled home working to reduce commuting emissions; transitioning companies from on-premise data centres to zero-carbon cloud data centres powered by renewables and extending the useful lifespan of devices to reduce manufacturing emissions.

HOW TO MEASURE SUCCESS

Px3 uses several approaches to encourage these four steps. We publish research that identifies key IT-related GHG abatement opportunities; for example, we identified that Google Chrome OS laptops reduce energy consumption by 57-84% when replacing similar devices or desktop computers. We also determined the average GHG

YOUR EMISSIONS

| 1 Month | 3 Months | **1 Year** |

8199.58 tCO2e
Scope 2 & 3

Total

Emission Equivalent
🚗 **81503 Cars**

Offset Required
🌲 **789 Acres**

The dashboard on the Px3 app acts as an IT GHG emissions smart meter

commuting to access IT (CAIT) impact of IT users in four continents – a useful statistic when planning international remote working.

Secondly, researching on behalf of end-user computing (EUC) device manufacturers, software vendors, the public sector and businesses, Px3 scientifically analyses computers for environmental performance in the workplace. This means we generate science-based findings that substantiate sustainable IT procurement and abatement strategies, and create valid and compliant data perfect for mandatory emissions reporting.

IDENTIFYING SUSTAINABLE DEVICES

Our unique Device Use Phase Analysis methodology recently identified an Acer notebook capable of reducing energy consumption by 62% when benchmarked against comparable devices. When deployed to 500 users, we found that the Acer device delivered a 9t CO2e reduction in scope 2 emissions during a five-year period.

We also identified a Prime Computer desktop that reduced GHG emissions by 70% and an LG all-in-one computer that consumed less energy than a stand-alone monitor. We help organisations quantify and visualise their current IT-related carbon footprint by accurately determining scope 2 hardware electricity consumption and scope 3 supply chain and CAIT emissions. We do this using the Px3 Planet People and Productivity cloud and mobile analytics app, which produces a range of environmental metrics that are both informative and tangible.

We deliver the GHG accounting values in compliant kgCO2e units, calculate energy saving in monetary terms and convert the emissions data into real-life equivalents. These include car miles, forest acres to sequester pollution and a unique per capita ratio called the Employee Vehicle Equivalent (EVE). These little nuggets of real-life impact gain support from stakeholders across the entire organisation, and they are popular – this year Px3 has measured more than 600,000 devices across the globe.

A CLIMATE EMERGENCY STRATEGY

Understanding real-life impact is paramount if we are to achieve our goal. With Acer, Citrix and Google Chrome OS, Px3 determined an effective strategy to support the Kingston and Sutton councils' approach to the climate emergency. IT-related scope 2 and 3

emissions were reduced by 32% and 40% respectively and the outcome saw Px3 nominated for this year's CRN sustainable IT impact award. Afterwards, Jason Sam-Fat, digital and IT commercial manager at the Royal Borough of Kingston & London Borough of Sutton Shared Service, said, 'We presented Px3's findings at our last climate emergency meeting. It was the first time we'd had such detailed information about our carbon footprint and it was really good that IT had significantly more information about emissions than any other department and a clear roadmap for the future'.

This type of feedback makes everything worthwhile, but in some cases cost can be a very real barrier to creating the roadmaps we need. In fact, my research revealed that in the UK service sector, cost is the biggest barrier to the diffusion of sustainable IT.

Fortunately, the Px3 application accounts for this by highlighting the money that can be saved by adopting low-energy devices.

David Grasty, corporate head of Digital Strategy & Portfolio at Kingston and Sutton, said, 'We estimate about a £40k reduction in our annual electricity bill just going from the old devices to 'state-of-the-art' new ones.'
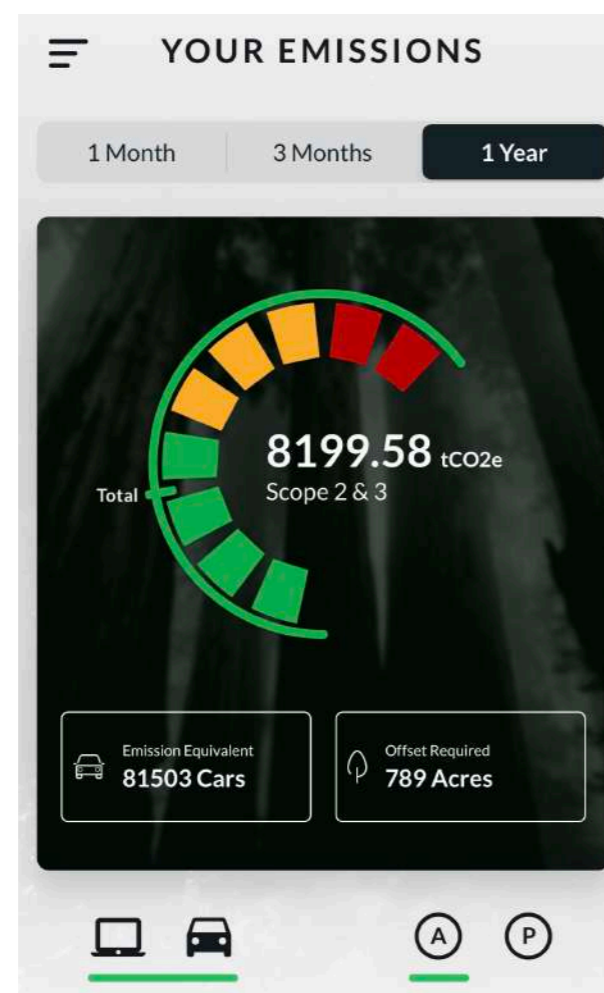
DISPLACING DEVICES

Saving money through sustainability is a theme that surfaces frequently in our work, especially during 'displacement' projects that extend a device's lifespan to prevent the manufacture of a replacement. This approach avoids embodied emissions as well as the upfront cost of having to buy new equipment.

Often, the device is re-purposed as a thin client for home working strategies. When this happens, a new, lighter operating system is loaded, ensuring the old device remains performant.

During research on behalf an international software vendor, we identified two sustainability gains: the new IGEL OS reduced device energy consumption by over 20% and displacement prevented 685,773kg CO2e scope 3 emissions for the customer.

That's equivalent to preventing over 2,485,000 car miles, or the amount of carbon sequestered by 823 acres of mature forest.

Data centres are integral to thin client solutions, but this doesn't necessarily lead to environmental burden. Last year's *Time IT changed* IT special edition of My Green Pod Magazine revealed that, if a data centre is highly efficient and uses

renewable energy, GHG emissions per kWh consumed are greatly reduced.

IT reseller Getech realises this; leveraging my findings, it is combining the net-zero Google Cloud platform with low-energy Google Chrome OS devices and Citrix remote working solutions to offer an all-in-one 'sustainable end-user compute' solution.

GREEN REWARDS

All devices do eventually meet an end. To ensure disposal and replacement are approached in the most sustainable way, Px3 has recently worked with Acer and leading digital enablement business Consenna to create and launch Acer's Green Rewards programme.

Through the rewards scheme, which is powered by the Px3 application, IT resellers can for the first time access a portal and receive a bespoke report defining sustainability gains related to procurement and recycling. We will soon take the stage with DEFRA at the chartered institute of IT to diffuse our message further.

In the meantime, next time you think IT, think four simple steps and perhaps even think Px3. After all, planet, people and productivity is a balance we all desire – and it doesn't cost the Earth.