Executive Study

Sustainability & the Role of Enterprise IT

How the Corporate Technology Function is Driving Sustainability & Impact Gains at European Businesses

A PAC Research Study

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INTRODUCTION

The IT function has the potential to play two vital roles in supporting Sustainability & Impact strategies.

Firstly, driving greater efficiency across infrastructure assets such as data centers and servers, as well as the application landscape can enable businesses to take a giant leap forward in achieving their decarbonization targets. While some industry estimates suggest that data centers account for between 4% to 8% of global carbon emissions, they can represent a much greater proportion within certain asset-light industries. For example, one UK retail bank states that as much as 40% of their direct emissions come from their IT infrastructure.

The second role is supporting broader Sustainability & Impact measures in areas such as waste management and responsible sourcing. In recent years, many businesses have ramped up their investment in new digital devices and infrastructure as they adapt to new working patterns and build more agile, digital cores. But IT and procurement leaders are increasingly tasked with ensuring that they have clear transparency on the vendors that they engage with and that their purchases support their aspirations in circularity and waste reduction.

PAC, Europe's leading analyst firm focused on the market for digital and sustainable transformation, recently undertook a major study based on briefings with 550 senior Sustainability & Impact strategy leaders at large European organizations. These participants represent nine major economies within Europe, and are split evenly across eight major industry sectors.

In this White Paper, the latest in a series based on the headline findings of the study, we explore some of the key talking points around how the enterprise IT function in enabling and enhancing Sustainability & Impact strategies. How much insight do organizations have into the performance of their IT vendors? And what role do they see public cloud services and remanufactured devices playing in their strategies? This Paper is designed to help Sustainability & Impact strategy leaders benchmark their own thinking and progress against other organizations, while providing some real-life examples of the initiatives that their peers are implementing in order to accelerate their momentum.

AUTHOR

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THE ROLE OF IT & CLOUD

The IT organization is seen as an important ally for enabling corporate Sustainability & Impact ambitions by an overwhelming majority of businesses.

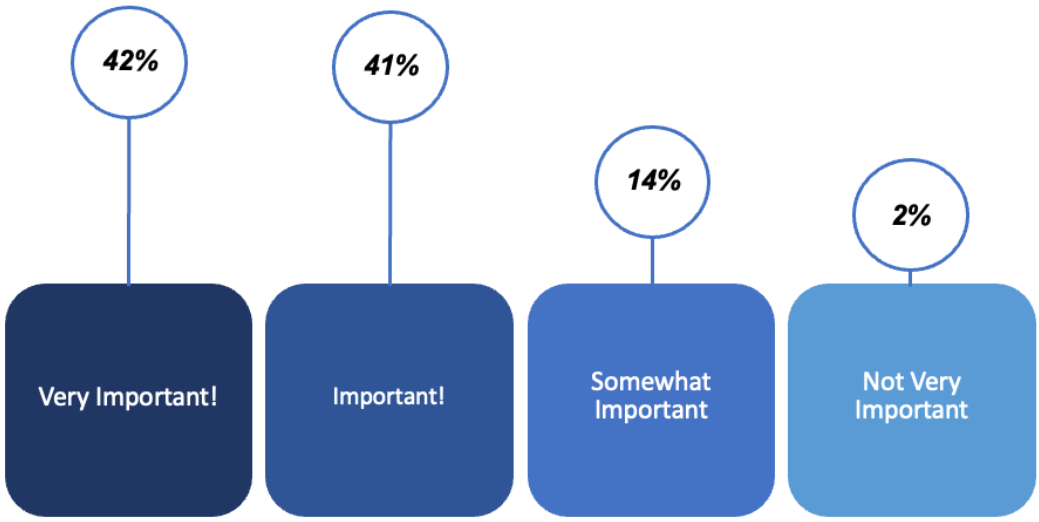
Some **83%** of European companies believe that their IT organizations is playing an important or very important role, with only **2%** believing that its impact will be limited. From an industry perspective, the IT function is viewed as particularly important in the retail and wholesale space (**50%** view it as “very important”) and by manufacturing businesses (**43%**).

The findings underline the critical overlap between Sustainability & Impact, and digital transformation strategies, which will require an evolving skill set and a new level of stakeholder engagement. The study found that while a quarter of businesses state that their Sustainability & Impact strategies are being overseen by multiple leaders from across the business, some **17%** state that the Chief Information Officer (CIO) or Chief Digital Officer (CDO) is playing an important leadership role in shaping the direction of their strategy.

This is a huge additional burden to place on the shoulders of IT leaders who are already tasked with ensuring that their companies harness technology in a way that keeps pace with the rapidly changing needs of the business. However, it also reflects the role that technology will play in generating the data insights to measure and report on Sustainability & Impact measures and progress, accelerating the development of new sustainable products and services, and in directly impacting emissions, waste and sourcing targets.

This last area is critical. With many businesses looking to unlock quick wins in meeting their stated Sustainability and Impact ambitions, driving short-term gains in the efficiency and footprint of their IT function is a priority area. An EU Commission study found that the data centers within the bloc increased their energy consumption by close to **50%** over the last decade, and now account for **2.7%** of the EU's total electricity demand. This level is expected to reach **3.2%** of total demand in 2030, and it is not just energy consumption that is an issue. Data centers use large volumes of water for cooling, which puts a further strain on an increasingly scarce resource, with Europe’s waterways reaching an historic low point in 2022.

Fig 1. What role is your IT function playing in enabling your Sustainability & Impact strategy?



The good news is that many businesses are making headway in reducing the impact of their data center estates.

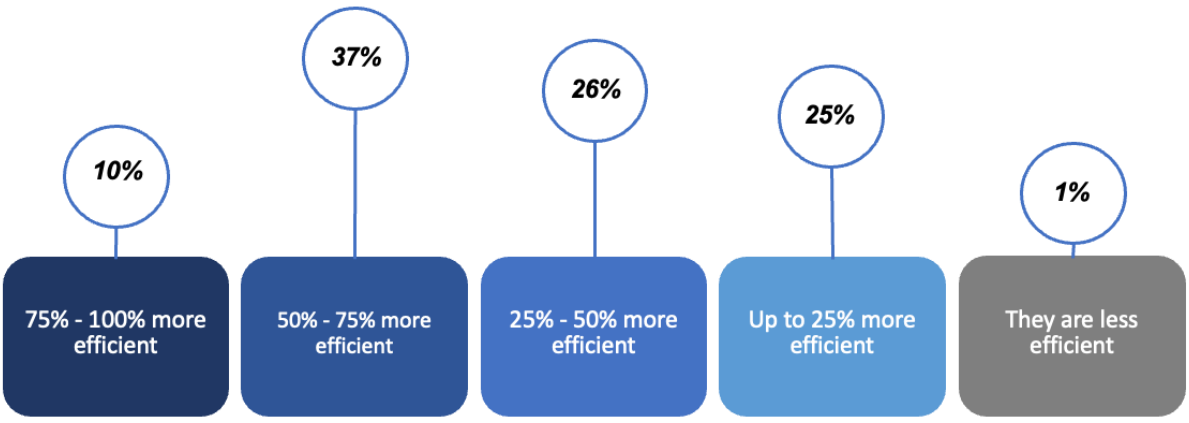
The **Government of the Netherlands** consolidated a cluster of 60 data centers into just four large sites, and halved their power consumption in the process. Banking group **ING** reduced its CO_2 emissions from its data centres by 80% between 2014 and 2022 through a programme of consolidation and modernization. In the UK, the **National Grid** is currently working with partners to consolidate its data center estate with the aim of delivering a more than 60% reduction in its data center footprint and a 40% reduction in their data center CO_2 emissions. Meanwhile, energy giant **EDF** recently ran a "Green Data Center Hackathon" event where it invited partners to explore energy efficiency solutions in areas such as heat capture and storage and the use of nuclear fuel.

There are multiple paths to improving IT efficiency, and one of the most common is to migrate workloads from their on-premise data centers to platforms run by large cloud services providers such as AWS, Microsoft and Google. In its most recent annual review of IT spending trends, PAC expects European businesses to increase their spending on public cloud services by **18%** to reach €115bn in 2023.

In reality, the explosion in adoption of public cloud services over the last decade was not due to their perceived benefits in supporting Sustainability & Impact goals. Instead, it was driven by organizations looking for fast, accessible and easy-to-consume ways to scale their digital initiatives as they became increasingly critical to the business. However, in recent years, the public cloud providers and their large ecosystems of partners have been increasingly vocal about the benefits that their economies of scale provide in terms of their ability to invest in the most energy and water-efficient delivery infrastructure. For example, **AWS** claims that its infrastructure is 3.6 times more energy efficient than the median level of US data centers and up to five times more efficient than the average level in Europe. But how effective are they perceived to be by European businesses?

The study found that public cloud platforms are perceived by almost three quarters of organizations as being at least **25%** more energy efficient than on-premise environments. From an industry perspective, more than half of businesses in the manufacturing, telecoms and public/healthcare sectors believe that public cloud services are more than **50%** more efficient. A growing number of businesses cite the energy efficiency advantages of public cloud services when they unveil new adoption initiatives. Finland-based stainless-steel manufacturer **Outokumpu** is migrating multiple workloads to a Microsoft Azure platform, with the aim reducing power consumption and emissions and supporting its strategy of becoming a "sustainability-focused organization." Banking group **UBS** claims that by migrating workloads to an Azure platform, it has achieved a 30% reduction in energy consumption in some case. The companies have co-developed a Carbon Aware API that advises on how to schedule heavy workloads during times when clean, renewable or low-carbon sources of electricity are most available.

Fig 2. To what extent do you believe public cloud services are more energy efficient than on-premise data centers?

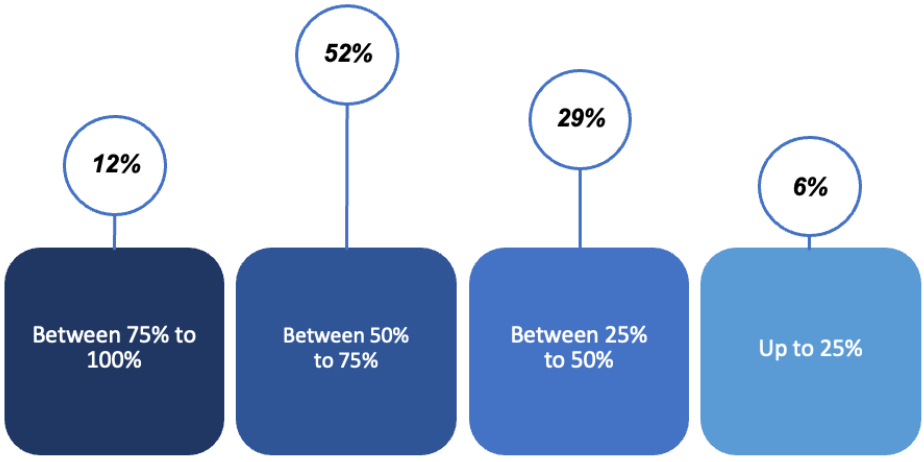


UBS is one of the most ambitious groups within the European banking sector in terms of the scale of its cloud migration. The company currently has **40%** of its applications running in the Azure cloud, and it plans to increase this level to **50%** in the next couple of years, including increasingly "critical" workloads. But given the gains that can be made from cloud in terms of Sustainability & Impact aspects, are other European organizations moving as quickly and with the same degree of ambition as the Swiss bank?

The study found that there is a lot of headroom for how businesses can harness the potential of public cloud. While a significant proportion run between **50%** to **75%** of their workloads on public clouds (with a strong weighting towards the smaller companies that participated in the study), more than one third (35%) have yet to get beyond the 50% mark. Retail, telecoms and banking companies run the highest proportion of their application workloads on the cloud, with public services and healthcare organizations the least aggressive.

Many businesses have started their cloud journey with the "low-hanging fruit," migrating low-risk workloads, the next phase of public cloud migration in Europe will see larger, more complex applications and processes making the transition. Lingering concerns over performance, security and data sovereignty have been overcome by the largely positive experience of this first wave of public cloud adoption, and we are now starting to see banks move core banking engines and insurers move policy and claims administration workloads onto cloud platforms. There are many potential benefits to this approach, in terms of improving scalability and adaptability, but it also significantly enhances the possible upside in terms of energy consumption and emissions reduction.

Fig 3. What proportion of your application workloads do you currently run on public cloud platforms?



RESPONSIBLE SOURCING & WASTE MANAGEMENT

Sustainability & Impact strategies are re-shaping the way that European organizations procure and source goods and services.

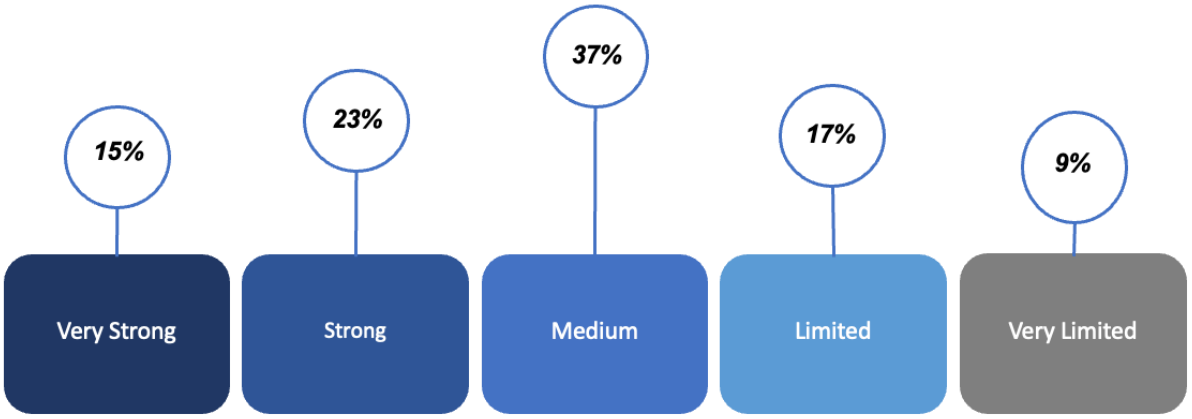
Consumer products goods giant **Unilever** is one company that is transforming its approach to drive more sustainable sourcing, with the aim of eliminating deforestation across its supply chain, and gain clearer insight into how materials such as palm oil are sourced through investment in areas such as satellite imaging, geo-location, digital twins and artificial intelligence.

But how clear a view do European businesses have on their IT providers' Sustainability & Impact performance? Based on PAC's latest market figures, European companies will spend €508bn on IT hardware, software and services in 2023. One of the emerging trends in IT sourcing during the last five years has been that contract tenders have increasingly scrutinized the level of progress that potential suppliers have made in reducing emissions and waste and in making their own supply chains more sustainable. However, the study found that there is a lot of room for improvement in this area.

Only **15%** of organizations claim to have a very strong understanding of their IT providers' waste and carbon footprint, while more than a quarter (26%) state that they have limited or very limited insight. More than one third of organizations in both the public/health and insurance sectors rate their insight into their IT vendors' performance on waste and carbon management as either limited or very limited. From a regional perspective, it is businesses in the Benelux region, Austria and Switzerland that have the lowest level of visibility into their IT vendors in this regard.

This lack of transparency is something that needs to be tackled on both sides. For example, one organization stated that when engaging with international IT partners that would use teams and services based in multiple locations around the world, they could not get a single, consistent view of performance metrics. On the vendor side, a common criticism is that while contract tenders often demand a breakdown of vendor performance against different sustainability measures, they are often not weighted strongly against cost due to the current focus on operational efficiency during the current economic volatility. Both sides have work to do, if IT sourcing strategies are going to demonstrate results in terms of carbon and waste reduction.

Fig 4. How do you rate your ability to track the waste and carbon footprint of your IT providers?



One aspect of sustainable IT sourcing that is stirring a growing level of interest is the use of remanufactured, carbon neutral digital devices, such as laptops, printers, phones and tablets.

Nearly 80% of a brand-new phone's total carbon footprint comes from the manufacturing approach, so taking a cyclical approach across a large estate can drive major reductions in emissions. France's **Environment and Energy Management Agency (ADEME)** estimated that over a course of two years of use, a refurbished phone generates 7.1kg of CO2 compared to 85.2kg of CO2 emissions by a brand-new phone. The World Economic Forum has found that 50 million tons of electronic and electrical waste are dumped into the environment every year.

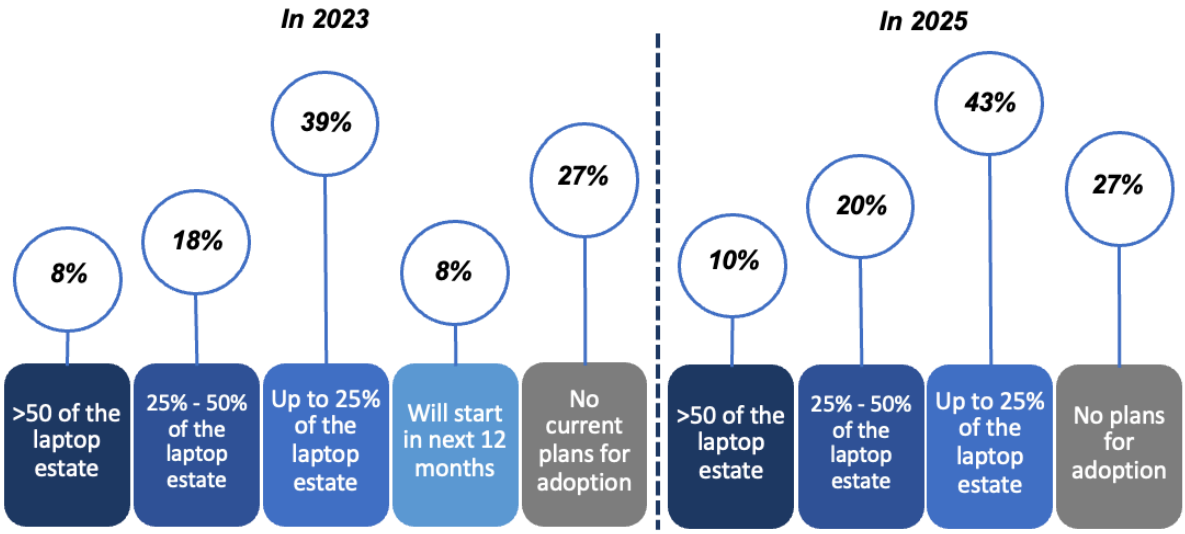
Surprisingly, the study found that adoption of remanufactured, carbon neutral devices remains low. While 39% of organizations stated that up to 25% of their estate is accounted for by these kinds of devices, and 8% expect to start using them in the next 12 months, more than a quarter (27%) have no current plans for adoption.

There will be an increase in adoption levels over the next two years, when 43% of businesses expect these devices to represent up to 25% of their estate and 20% expect them account for a proportion of between 25% to 50%. But given the potential gains to be made, this still represents slow progress.

Vendors are putting their shoulder to the wheel in order to improve the availability of refurbished devices. Storage manufacturer **Seagate** claims that over a one-year period, its refurbishment program restored more than 1.1 million hard drives and solid-state drives for safe reuse. **The Royal Mint** in the UK recently signed a deal to source re-manufactured laptops from sustainable IT equipment provider **Circular Computing**.

In recent years, there has been a race to provide employees with the best-possible workplace experience, and there has been a surge in investment in new devices to support the tools that colleagues need to maximize their productivity. However, there may be a better balance to strike, and the level of experience offered by re-manufactured devices may not represent a step down. For example, Circular Computing claims that it can provide re-manufactured laptops from vendors such as Lenovo and Dell that deliver 97% of the performance at 40% of the cost. The rise of Generation Z employees, who many research studies have found often prefer to buy or use products that have strong sustainability credentials, may help to move the dial at a faster rate than many European businesses are currently expecting.

Fig 5. To what extent does your organization currently use remanufactured, carbon-neutral devices (laptops, printers, phones, tablets)?



CONCLUSIONS & RECOMMENDATIONS

Enterprise IT leaders are expected to play a leading role in both enabling their Sustainability & Impact strategies and in delivering direct short-term quick wins in emissions and waste reduction.

Many businesses have already achieved significant, measurable gains through consolidating and rationalizing their internal data center infrastructure. Other companies will follow suit, but they need to ensure that they tackle important considerations in areas such as business continuity and risk management.

The study found that a large number of European organizations expect the adoption of public cloud services to deliver another level of benefits. Many have already migrated significant workloads across, and as they shift their attention to more critical processes and applications, their business case is increasingly being framed by sustainability factors as well as benefits of cost and scale.

It is important for strategy leaders to understand that migrating to public cloud does not provide a guarantee for energy efficiency gains in itself. Cloud service consumption needs to be governed and managed effectively to ensure that it is scaled in the most effective way. The most successful migration programmes in terms of efficiency gains are those that take a wider look at the workloads and applications that are being considered for re-platforming, and identifies those that can be amalgamated, slimmed down or retired completely.

There are new regulatory drivers on the horizon that will force businesses to move at a faster rate on improving the efficiency of their IT environment. The European Union is currently drafting regulation on data center performance to support its wider goal of climate neutrality status for the region by 2050. The Climate Neutral Data Centre Pact (CNDCP), a group of operators which represents 90% of the European market has already pledged to beat this target voluntarily, while also making major commitments on reducing water consumption. PAC expects the speed at which these operators are moving on reducing their impact to encourage more European businesses to make use of their services in order to accelerate their own progress.

The study found a surprisingly low level of adoption of remanufactured, carbon-neutral devices today, despite the clear benefits that they deliver. The availability of these devices is improving all the time, and more enterprise IT strategy leaders will start to appreciate that they can deliver a cost-effective and compelling digital workplace experience, without compromising performance levels. The number of use cases in sectors such as government are starting to stack up, and momentum will build in other industries as both employees and IT leaders push for more sustainable options.

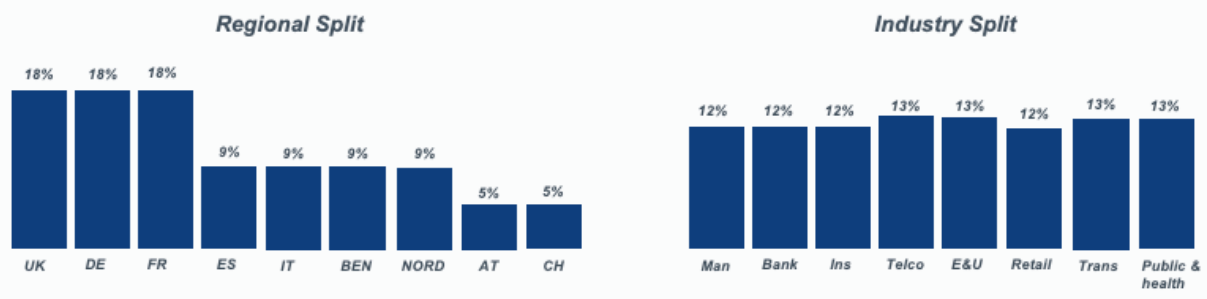
There is also a lot of room for improvement in terms of the level of insight that IT buyers have into the Sustainability & Impact performance of their suppliers. IT strategy leaders are expected to play a pivotal role in supporting a more sustainable sourcing approach, and they will increasingly engage with those vendors that can demonstrate the highest level of transparency into quantified metrics.

The enterprise IT function has already made many positive contributions towards corporate Sustainability & Impact strategies. But the untapped potential of cloud and more sustainable sourcing choices present a wealth of opportunities to achieve further progress in both the immediate future and longer term.

METHODOLOGY

The findings of this study are based on a survey of senior business and technology executives at 550 large and medium-sized organizations based in nine major Europe economies. All of the participating organizations have between 500 to 5,000 employees and operate across eight different industry sectors. The survey was run in the first quarter of 2023. A breakdown of the survey sample by industry and region can be found below.

Breakdown of Sample Group by Sector and Region



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