



INSIGHTS | TECH BRIEF

## 5 IT Sustainability Approaches To Drive Efficiency In The Enterprise

Vocabulary in corporate IT has steadily evolved as terms like *hybrid cloud*, *remote work* and *ransomware attack* have become commonplace. Similarly, another key term continuing to gain prominence is *sustainability goals*. With the global population surpassing 8 billion, many are just beginning to embrace the digital era. Companies are operating with the future in mind as they identify strategies that are both economically and environmentally friendly.

Indeed, sustainability has become a driving force in corporate America. A recent survey revealed that 82% of businesses in North America have set internal environmental sustainability targets focused on energy evolution and efficiency.<sup>2</sup> In fact, according to the Honeywell 2023 Sustainability Index, sustainability goals were perceived as the top corporate priority (75%), surpassing digital transformation initiatives (65%), market growth (51%), and financial performance (46%).<sup>3</sup>

### The Double-Edged Impact of Information Technology

Information technology is a double-edged sword. On one hand, it has become the backbone of modern business, driving innovation, efficiency, and competitive advantage by enabling streamlined operations, enhanced customer experiences, and access to global markets. At the same time, IT is a significant driver of carbon emissions. For example, data centers consume vast amounts of electricity. Some forecasts predict that data centers could consume up to 21% of the world's electricity by 2030.<sup>4</sup> In addition, the lifecycle of rapidly evolving digital technologies leads to significant electronic waste, further impacting environmental sustainability.

### Sustainability Tops The Corporate Priority List

A 2022 Gartner survey revealed that 87% of business leaders intended to increase their sustainability investments over the next two years, with 86% believing these investments to be crucial in protecting their organization from disruption.<sup>5</sup> There is a growing recognition among both business leaders and IT leaders that practices such as minimizing waste, reducing carbon emissions, and preserving natural resources isn't just good for

# 32%

of companies streamline their innovation process **by investing in more sustainable IT infrastructure.**<sup>1</sup>



the environment, but also good for business. This commitment to sustainability resonates with consumer priorities too, as 78% of consumers say that living sustainably is important to them, and 30% are more likely to purchase products that are environmentally friendly.<sup>6</sup>

## IT Sustainability Challenges

Much progress has been made toward sustainability thanks to the extensive cloud migration that many enterprises have implemented, reducing the reliance on physical data centers. This transition to the cloud enables organizations to utilize the efficient infrastructure of cloud providers, many of which harness renewable energy sources and employ sophisticated energy-saving technologies.

However, while the cloud has significantly propelled sustainability efforts forward, it cannot accommodate all digital needs. Similar to how electric vehicles do not meet the requirements of every driver as of yet, the cloud does not suit all applications. The IDC reports that about 70% of applications were not developed with cloud environments in mind. Additionally, some applications need their data to stay within on-premises data centers, colocations, and edge computing locations.<sup>7</sup> This necessity may stem from the need for low latency, adherence to data governance policies, data sovereignty, or specific technical constraints.

In truth, companies must roll up their sleeves and work proactively to address IT sustainability as IT leaders and the personnel they oversee face growing pressure to significantly reduce emissions. Below are five sustainability strategies to serve as a starting point.

**1. Energy Efficiency:** The essence of energy efficiency is about delivering an optimum level of compute, storage, and connectivity with the lowest energy input possible. Still, by 2020, the average rack density in data centers had almost quadrupled over nine years, significantly increasing the demand for both power and cooling. Remarkably, cooling systems account for 40% of a data center's energy consumption.<sup>8</sup>

To enhance energy efficiency, companies should implement energy management systems such as HPE's OneView for real-time power monitoring and management to ensure that energy is used most effectively. These solutions help optimize equipment utilization, power consumption and thermal output. Emphasis should also be placed on regularly maintaining cooling systems, power supplies, and hardware to maintain optimal performance. Adopting modular data center designs can minimize energy waste associated with underutilized equipment, while the emergence of micro data centers is contributing to further advancements in this area.

Furthermore, as-a-service delivery models have demonstrated potential energy cost savings of up to 33% when compared to traditional capital expenditure models.<sup>9</sup>

**2. Equipment Efficiency:** When IT assets are more efficient, they perform more computations or store more data per unit of energy consumed, which leads to lower overall energy usage. This not only diminishes the demand for electricity, which is often generated from fossil fuels, but also reduces the heat generated by these systems, further decreasing cooling requirements. Companies must turn to equipment vendors that prioritize efficiency in their products. One example is longtime WEI partner, HPE, whose HPE GreenLake Central platform provides a holistic view of infrastructure efficiency to enable easier management across a hybrid cloud environment.

**3. Resource Efficiency:** This journey starts with crafting products optimized for peak efficiency and integrating AI to automate routine data center management tasks. This includes adjusting power settings and powering down idle equipment, thereby increasing energy efficiency. Additionally, AI can enhance virtualization infrastructure by consolidating workloads onto fewer physical servers and dramatically lowering power and cooling needs. AI algorithms can also sift through sensor data and logs to predict and extend the lifespan of data center components, further optimizing resource use.



**4. Software Efficiency:** Software is increasingly pivotal in advancing business goals and holds significant potential for driving sustainability efforts. An IDC survey found that 62% of organizations reported a reduction in energy expenditures using software tools.<sup>10</sup> Unlike human teams, software can autonomously manage energy settings, optimizing consumption during off-peak hours when human oversight is unavailable. Furthermore, software vendors and developers can contribute to sustainability by creating more efficient code.

Leaner, more efficient code allows applications to achieve the same outcomes with lower demands on hardware. This means tasks are completed quickly while using fewer resources. Optimizing algorithms and simplifying computational processes are key strategies in enhancing code efficiency.

**5. Data Efficiency:** By limiting data processing and storage to only what's necessary, data centers can operate more efficiently, using less energy for computing and cooling. Minimizing data volume can lead to fewer servers and storage devices which not only reduces energy use but also lessens the environmental impact associated with manufacturing, shipping, and eventually disposing of these devices. Meanwhile, strategic archival decisions can move frequently accessed data to lower performance, energy-efficient storage solutions or even offload it to cloud storage where it can be managed more sustainably.

## Select Vendors with Sustainability in Mind

As IT sustainability efforts are still developing, IT purchase personnel find themselves relying on their vendors for guidance. WEI is dedicated to implementing energy-conscious initiatives, such as employing HVAC economizers in our own data center. These systems leverage the cool, ambient air from our northeast environment, utilizing smart sensors to gauge outdoor air temperature and humidity, and introducing fresh air when beneficial.

This is just one example of many that shows how we practice what we preach in IT sustainability.

## Talk to WEI today

We collaborate with leading global vendors who are committed to achieving net-zero carbon emissions across their value chain. Our choice of partners reflects our commitment to advancing our businesses responsibly, emphasizing the significant influence vendor selection has on our environmental stewardship.

Contact our experts to find out how WEI can guide your enterprise toward meaningful IT sustainability.

### Sources:

1. "European Custom Survey," IDC, July 2022
2. The Future Of Corporate Sustainability—Even In A Tough Economy (forbes.com)
3. Environmental Sustainability Index - Honeywell
4. AI models are devouring energy. Tools to reduce consumption are here, if data centers will adopt. | MIT Lincoln Laboratory
5. Gartner Survey Finds 87% of Business Leaders Expect to Increase Sustainability Investment Over the Next Two Years
6. Source: NielsenIQ Global Health & Wellness Study of 17 markets, September 2021, US results; NielsenIQ Omnibus Survey, Dec 2021
7. The urgency of transitioning to low-energy data centers: Rajesh Dhar, HPE India, ET CIO (indiatimes.com)
8. Immersion cooling is heating up Omdia (informa.com)
9. Cooling Energy Consumption Investigation of Data Center IT Room with Vertical Placed Server - ScienceDirect
10. 6 Steps For Developing A Sustainable IT Strategy: Sustainable IT Workbook - <https://www.hpe.com/psnow/doc/a00115687enw>

## About WEI

*WEI is an innovative, full service, customer centric IT solutions provider.*

*Why WEI? Because we care. We go further.*

WEI is an expert in business technology improvement, helping clients optimize their technology environments and work efficiently. WEI works with clients to understand goals, integrate strategy with technology solutions, and leverage their current IT environment into one company-wide model to increase utilization and efficiencies around their unique business processes.