

Quantifying the Sustainability Benefits and Business Value of HPE GreenLake



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Executive Summary

Sustainability has emerged as a pivotal driver for organizations developing strategies to enhance key metrics throughout their entire ecosystem and achieve set goals. In an IDC survey¹, 63% of global organizations consider sustainability a top business priority. Furthermore, most organizations seek IT vendors and partners that share their commitment to sustainability and offer valuable insights from their own experiences, and they then leverage that expertise as best practices.

While organizations are prioritizing sustainable IT initiatives, they are also coping with increased demand for digital transformation and AI workloads. The IT market today is defined by the struggle of these two seemingly opposing goals: the need for more IT and data center resource capacity for power hungry, data intensive workloads while trying to become more sustainable by reducing power usage, decreasing carbon emissions, and lowering costs.

For many organizations, adopting an as-a-service (XaaS) model enables them to harness the built-in monitoring and telemetry capabilities to provide real-time feedback about their operational efficiency. Working with a strategic partner that is also focused on sustainability often includes Sustainable IT solutions such as XaaS platform for scalable resources and infrastructure assets designed for improved energy efficiency, reduced emissions and better monitoring. This combined approach allows organizations to reach key sustainable IT milestones through real-time data that further reduces energy consumption and improves service levels and the extension of IT equipment life cycles.

As-a-service models empower organizations to improve operational efficiencies, cut costs, and make strides toward sustainable IT objectives. Continuous monitoring, integrated life-cycle services, and secure decommissioning mitigate the risk of financial and regulatory penalties and deliver a better employee experience. Opting for an as-a-service approach streamlines the complexities of implementing a comprehensive sustainability strategy across the entire IT organization, from the cloud, edge, and datacenters to colocation facilities.

Business Value Highlights

Click the highlights below to navigate to content within this document.

- ↓ **53%** reduction in infrastructure energy consumption
- ↓ **36%** fewer servers required for equivalent workloads
- ↓ **27%** decrease in energy consumed per server (kWh) per year
- ↓ **45%** lower cost of operations for equivalent workloads
- **10-month** breakeven on the initial investment
- ↑ **37%** more efficient IT infrastructure teams
- ↓ **54%** reduction in spending for equivalent server capacity
- ↑ **81%** faster to deploy new compute resources
- ↓ **86%** reduction in unplanned downtime

¹Source: IDC 2023

IDC spoke with organizations that have deployed Hewlett Packard Enterprise (HPE) infrastructure solutions with HPE GreenLake with the goal of understanding the impact in terms of IT costs and operations, as well as organizational sustainability objectives. Study participants described achieving important financial and operational benefits through the use of HPE GreenLake, as well as establishing more sustainable IT infrastructures. In financial terms, IDC's analysis shows a relatively short investment payback period, with benefits outpacing costs, even in the first year of investment. Meanwhile, interviewed HPE customers also reported much more energy-efficient and sustainable IT infrastructures.

Among the main factors responsible for this assessment are:

- **Establishing more efficient, powerful, and well-architected infrastructures**, increasing the number of servers per rack and at the same time reducing the average cost per server
- **Benefiting from a sustainable and cost-efficient IT operating model**, reducing datacenter power consumption and carbon footprint, and achieving a synergy between the economical and the environmental impact
- **Enabling IT operations employees**, providing a significant amount of time saved that can be focused on other value-adding activities
- **Reducing the time required to deploy new IT resources and infrastructure**, enabling an agile response to the organization's IT infrastructure needs, and removing a roadblock to quickly addressing business opportunities and serving customers
- **Creating a more stable and reliable infrastructure**, with a strong reduction in both the frequency of downtime and incident resolution time, helping organizations rely on their infrastructures to support business initiatives more than ever

Situation Overview

IDC research reveals that a primary focus among organizations is improving operational efficiencies, cost reduction, and achieving sustainability objectives. To deal with the daunting challenges of managing complex IT environments, the pressure to invest in expensive IT resources, and IT talent and skills shortages, IT organizations are increasingly turning to as-a-service providers that offer technology platforms and colocation facility options as a service.

IDC research² underscores this perspective: 78% of respondents agree or strongly agree that XaaS offerings are integral to their future strategy.

²Source: IDC 2023

The primary market trends that are driving interest in these XaaS offers include:

- Leveraging as-a-service solutions to reduce IT workloads and enable IT staff to develop new skills
- Accelerating modernization, automation, and consumption strategies
- Strengthening and extending collaboration and governance across line-of-business, development, and data teams
- Aligning key performance indicators (KPIs) with business outcomes

In addition, pressure from multiple stakeholders, including regulators, investors, and customers, has made sustainability a top-of-mind concern for business leaders, and it's also a key criterion for IT vendor selection. Vendors must not only possess a commitment to sustainability but also demonstrate credibility across a range of topics, such as energy efficiency, decarbonization, and circularity.

Recent IDC research indicates that 63% of organizations worldwide believe that sustainability is a top business priority and recognize that regulatory scrutiny and sustainability reporting mandates are increasing. This is a growing area of concern for customers and an area of opportunity for HPE to amplify its abilities with quantifiable metrics from the HPE Sustainability Insight Center that can be included in ESG reports. These insights enable IT teams to operationalize their hybrid environments, including access to and deployment and management of an entire ecosystem from one platform and the ability to achieve end-to-end visibility and control of capacity and costs with consumption analytics.

HPE Greenlake Overview

HPE GreenLake, a hybrid cloud platform designed for digital infrastructure modernization and transformation, ensures consistent security and AIOps-driven operational experiences across deployment locations. HPE is continuously enhancing the platform by integrating more services to simplify IT and hybrid cloud environment management and enhance customer experience. The platform offers a unified view and observability of hybrid IT operations; single, consistent cloud experience across clouds, datacenters, and edge locations; and a pay-as-you-go, subscription model, positioning HPE as a key player in hybrid cloud estates.

In line with a commitment to sustainability, HPE focuses on improving sustainability metrics across its portfolio and works with customers to design their own sustainable IT road map. This involves evaluating the current IT environment and designing and implementing a sustainable IT strategy. Working with HPE advisory services to support organizations in achieving improved operational efficiency and reduced costs is also included.

The HPE Sustainability Insight Center provides energy and carbon emissions analysis and reporting through a unified console to empower customers to make impactful changes, lower costs, and achieve their sustainable IT goals.

The HPE Sustainability Insight Center provides a current view of the total energy consumption, including:

- Provides information about greenhouse gas emission and costs associated with energy consumption
- Measures the carbon footprint of HPE IT assets based on actual energy usage
- Analyzes telemetry aggregated across sites and provides cumulative totals and averages
- Reports carbon footprint and energy costs across sites (per device and site location)

In 2023, HPE acquired OpsRamp, a multivendor and multicloud observability solution, with plans to integrate it into the HPE GreenLake platform and support services. OpsRamp provides additional capability to the HPE Sustainability Insight Center and provides AI-driven operations for managing diverse IT environments. The integration goals are to simplify the management of multivendor and multicloud hybrid environments and provide comprehensive visibility and control. HPE aims to strengthen its hybrid cloud position and expand HPE GreenLake's capabilities.

IDC believes that the combination of HPE GreenLake's focus on reducing the environmental impact of IT and integration of OpsRamp visibility and monitoring across the estate delivers a powerful solution for organizations that are looking for a partner to help with their sustainable IT journey.

The Business Value of HPE Greenlake

Study Demographics

For the purposes of the study, IDC interviewed IT managers at 11 organizations using HPE GreenLake infrastructure solutions, including server and storage infrastructure, from a range of verticals. With an average revenue of \$13.3 billion (\$12.3 billion median), most of the participating organizations can be categorized as large enterprises.

The organizations’ workforces range from a low of 3,000 employees to a high of 110,000, resulting in an average of 41,927 and a median of 22,000 employees. This variance is reflected in the participating organizations’ industry verticals, which include financial services, telecommunications, construction, education, government, insurance, manufacturing, and transportation. Outside of seven United States–based organizations, Brazil, Finland, New Zealand, and the United Kingdom were also represented. Thus, IDC’s research reflects a global sample for a study concerned with topics of global implication. For a more detailed view of the study’s demographics, see **Table 1**.

TABLE 1
Demographics of Interviewed Organizations

	Average	Median
Number of employees	41,927	22,000
Number of IT staff	1,842	650
Number of business applications	364	200
Revenue per year	\$13.3B	\$12.3B
Countries	United States (7), Brazil, Finland, New Zealand, and the United Kingdom	
Industries	Financial services (2), telecommunications (2), construction, education, government, insurance, manufacturing, and transportation	

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Choice and Use of HPE GreenLake

An integral part of the study was to establish motivations and reasoning of the participants as to why they chose HPE GreenLake for their compute and storage requirements. Among the often cited reasons for choosing HPE GreenLake was the desire to take advantage of having a managed service, through which HPE would comprehensively handle concerns such as security, compliance, and performance, thereby allowing for efficiencies and synergies.

Many organizations also viewed sustainability as a driver for their use, with the intent to reduce their expenses associated with energy consumption, while others identified the reduction of their IT carbon footprint as one of the drivers in choosing HPE GreenLake:

Needed an in-house solution with strong external support (IT director — Construction):

“Our organization was looking for an on-premises solution organized by an external partner. The main goals were to better control compliance, performance, and security. With HPE servers, we’ve been able to reduce our energy consumption and capital expenditure.”

Right service-based model (Senior director — Manufacturing):

“Our organization was in the market for an OEM provider offering a fully managed experience. The main selling point of HPE proved to be the scope of the offered solution and a one-invoice consumption-based model for the datacenter work.”

Ability to adapt to changing business needs (Product owner — Insurance):

“The key aspect for our organization was managed services, providing monitoring and security and meeting day-to-day operational needs while ensuring rapid scalability according to our business needs.”

More sustainability-friendly equipment (Infrastructure manager — Telecommunication):

“Operating a datacenter requires facing a challenge of reducing their carbon footprint, especially with mismatched equipment and out-of-date software. Choosing HPE GreenLake alleviated these concerns and created an environment in which sustainability was possible.”

Table 2 (next page) provides a detailed view of study participants’ use of HPE GreenLake. The average respondent reported deploying 535 servers and 10,347 virtual machines, with 46,467TB (2,000TB median) of available data storage across 110 sites and four geographical locations. The averages of 14,073 internal users and 224 applications speak to the robust use and level of trust the organizations have in their HPE GreenLake infrastructures and environments.

TABLE 2

HPE GreenLake Use by Interviewed Organizations

	Average	Median
Number of branches/sites	110	26
Number of geographical locations	4	3
Number of datacenters	2	2
Number of servers	535	85
Number of VMs	10,347	1,200
Number of storage TBs	46,467	2,000
Number of applications	224	45
Number of internal users	14,073	8,000
Percentage of revenue supported by HPE GreenLake applications	43%	29%

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Business Value and Quantified Benefits of HPE GreenLake

The quotes provided in this section illustrate both the general consensus and specific examples study respondents spoke to about benefits derived from using HPE GreenLake.

The most often identified benefits show that HPE GreenLake delivers on-demand scalability of compute and storage, reduced IT costs, and allows employee time to be focused on higher-value activities while enabling organizations to move toward meeting their sustainable IT objectives:

Ability to scale as needed (Senior IT director — Transportation):

“Capacity management and planning with HPE GreenLake is a major benefit for our organization. With on-demand and scalable compute and storage allowing payment for actual usage, we’ve been able to save 30%–40% on IT costs alone.”

Flexible model enabling cost and time savings (IT director — Construction):

“Scalability without delays, made possible by the flexible hybrid IT model, is a major benefit of HPE GreenLake. We’ve reduced IT costs as well as reducing opex spending. The added flexibility of the IT teams to focus on various areas makes them more efficient.”

Able to work on other business-centered tasks (Senior director — Manufacturing):

“HPE GreenLake enabled our organization’s resources to focus on higher-value activities than the day-to-day operational technical maintenance in a datacenter.”

Easier procurement process along with additional services and features

(Infrastructure manager — Telecommunication):

“For our organization, HPE GreenLake means a straightforward, automated, and lean procurement process that can be augmented with additional capabilities when moving between generations of technology.”

Study participants placed high value on achieving more environmentally sustainable IT infrastructures and operations with HPE GreenLake. They explained that they have reduced infrastructure capacity needs through improved workload placement and performance, and that they gain operational efficiencies from having a flexible consumption and operating model. Interviewed HPE customers cited reduction of carbon footprint, recycling and reuse strategy, and lower energy consumption as important sustainability benefits.

Interviewed organizations spoke in detail about how HPE GreenLake has helped them better meet sustainability objectives related to their IT infrastructures:

Optimizing costs and carbon footprint (Senior IT director — Automotive):

“The challenges we faced before implementing HPE GreenLake were in trying to control costs and also, from an environmental standpoint, trying to solve how we could reduce our overall carbon footprint.”

Lower carbon footprint and energy requirements (CIO — Manufacturing):

“With HPE GreenLake, our organization has achieved a reduction of its carbon footprint and the amount of energy needed to cool our datacenter.”

Going beyond carbon-neutral for certain activities (Infrastructure manager — Manufacturing):

“With HPE GreenLake, our organization harnesses the waste heat of the servers and in turn delivers it to the heating system of the surrounding urban area. By doing this, we have reduced the amount of heat generated by burning fossil fuels, thereby lowering the overall city carbon emissions. In the specific case of our organization, these activities can be described as carbon negative because our datacenter uses certified energy from sustainable sources.”

Infrastructure Use and Cost Efficiencies

A key driver of study participants’ ability to achieve not only business value but also sustainable IT benefits through the use of HPE GreenLake ties to their ability to establish more efficient and streamlined infrastructure environments. With HPE GreenLake, not only can they take advantage of higher-performing server and storage to run equivalent workloads with less infrastructure, they gain from optimizing their IT architectures with HPE’s support to reduce infrastructure sprawl and inefficiencies in use. For interviewed HPE customers, this means that they require fewer servers and less storage capacity to run equivalent workloads, even as they generate further benefits related to enhanced agility, scalability, and performance of their HPE GreenLake servers and storage.

Interviewed organizations reported needing 36% fewer servers with HPE GreenLake to run equivalent workloads with HPE GreenLake. As a result, they can spend significantly less on server resources as they need almost 300 fewer servers on average. This finding demonstrates how HPE GreenLake enables study participants to run equivalent workloads with fewer servers. Study participants noted not only consolidating infrastructure in central locations and datacenters but also needing to maintain fewer servers in distributed locations. Overall, IDC’s findings show how HPE GreenLake enables interviewed organizations to operate server environments that are more efficient from both a performance perspective and a resource consumption perspective (see **Table 3**).

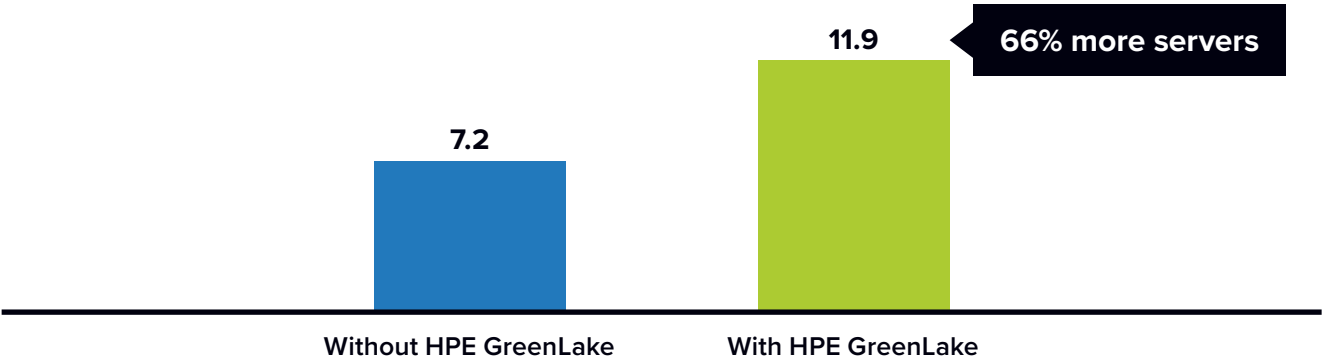
TABLE 3
Impact on Server and Infrastructure Requirements

	Without HPE GreenLake	With HPE GreenLake	Difference	Benefit
Number of servers	834	535	299	36%

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Study participants reported that increased server density was another benefit of HPE GreenLake, which reflects their ability to establish more streamlined IT infrastructures with greater server capacity in less space. These benefits drive both IT operational cost efficiencies and sustainability benefits. Organizations reported increasing the number of servers per rack from an average of 7.2 to 11.9 with HPE GreenLake, representing a 66% increase, as demonstrated by **Figure 1** (next page).

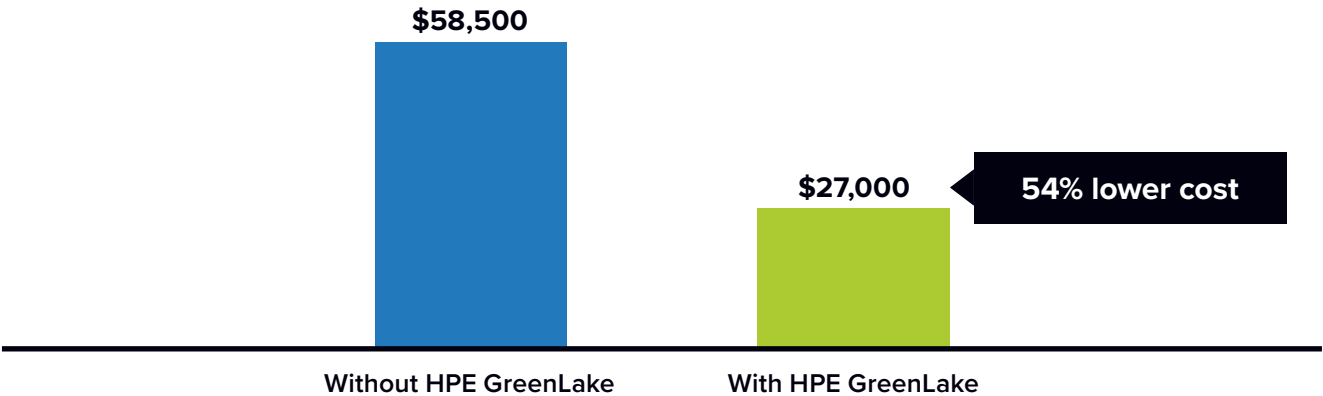
FIGURE 1
Average Number of Servers per Rack
(Number of servers per rack)



n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

By having optimized, higher-performance per watt server environments with HPE GreenLake, organizations have decreased their server costs on a per unit basis. On a three-year average, they will cut their spending almost in half with HPE GreenLake for equivalent server capacity, reducing the cost of a given server by an average of 54% from \$58,500 without HPE GreenLake to \$27,000 with HPE GreenLake (see **Figure 2**).

FIGURE 2
Impact on Average Server Cost
(\$ per server per three years)



n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Resultant Sustainability Benefits

Study participants linked an array of sustainability-related benefits to their use of HPE GreenLake. Most importantly, they establish more streamlined, optimized infrastructure environments that consume less energy for running equivalent workloads. Organizations reported an overall decrease in power consumption for running equivalent environments, which is especially important as the market price of energy has increased and the environmental costs of inefficient energy use become more clear.

Interviewed HPE customers linked these sustainability gains to specific qualities of HPE GreenLake solutions. The ability of HPE GreenLake technology to deliver sustainable IT benefits while increasing performance provides evidence that economic and environmental concerns are not necessarily in tension with each other but rather can be synergic. HPE GreenLake implementation also helped improve the organizations' sustainability positioning, with the knowledge that due to robust technology life-cycle management, retired infrastructure was properly reused, recycled, or disposed of. These and other benefits are major contributors to the organizations' stated sustainability goals, saving internal costs and signaling the organizations' values to the market.

Study participants described specifically how use of HPE GreenLake has provided benefits from a sustainability perspective:

Having rightsized infrastructure allows them to be more sustainable (Infrastructure manager — Telecommunication):

"Our organization's datacenter is the most environmentally sustainable R&D location of the whole company. The datacenter has proper infrastructure and size, is properly timed, and keeps IT technology viable. HPE GreenLake also provides certainty about sustainable disposal of decommissioned technology."

HPE fits in with their sustainability values (Vice president — Financial services):

"HPE GreenLake has been very good for our organization on sustainability matters. We are very well positioned on that matter. Being able to show our shared values on sustainability is very welcome by the market, especially on the energy economy."

HPE GreenLake helped cut energy costs despite increased prices (IT director — Construction):

"Our organization has reduced energy spending by around 25% over the last three years, especially in the last year. The price of electricity has gone up, but we're using 25% fewer units of electricity. HPE GreenLake has also reduced the total cost of infrastructure by 45%, and it's also improved IT resource efficiency by around 60%."

HPE GreenLake is a significant piece of overall sustainability strategy (Infrastructure manager — Telecommunication):

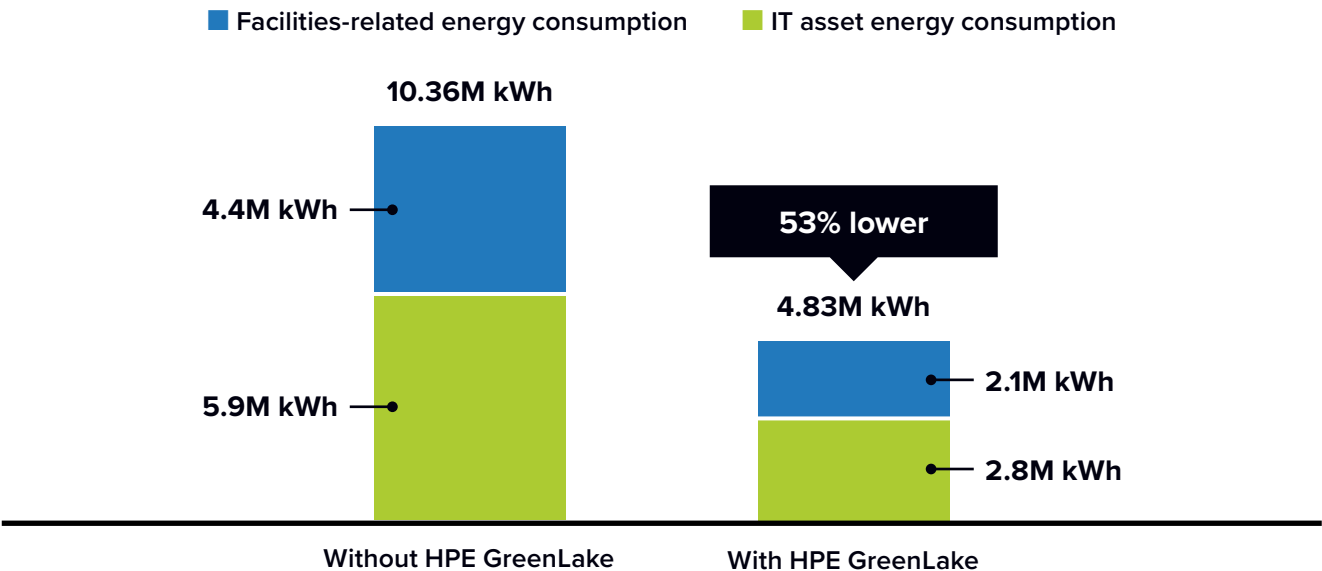
"Our organization has a yearly target linked to carbon footprint reduction and energy efficiency. HPE GreenLake is contributing 20%–25% to the fulfillment of that target."

The data in **Figure 3** provides details of the energy consumption benefits identified by the study participants. In terms of IT asset- and facilities-related energy consumption, the average organization more than halved its overall consumption with HPE GreenLake, reducing the yearly requirements from 10.36 million kWh to 4.83 million kWh (53% reduction) to run equivalent IT environments. After implementing HPE GreenLake, participants reported a reduction of almost 2,000 kWh of energy consumption per server per year. They also reported that they needed fewer servers, which were more densely configured to run the same workload, resulting in less datacenter space and corresponding energy savings from cooling the datacenter.

FIGURE 3

Impact on Energy Use

(Millions of kWh per organization per year)



n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

For an accessible version of the data in this figure, see [Figure 3 Supplemental Data](#) in Appendix 2.

Reducing energy consumption has a real-world environmental impact, as illustrated in **Table 4** (next page). Study participants were subdivided into their reported geographical locations, and based on the findings illustrated in **Figure 3**, IDC has calculated the average carbon footprint reduction by location given local data on emissions associated with energy consumption and other factors. For the average organization in this sample, these energy consumption reductions have meant reducing its carbon footprint by the equivalent of taking around 500 cars off the road in the United States or the European Union as a whole or around 300 cars off the road in Finland or New Zealand.

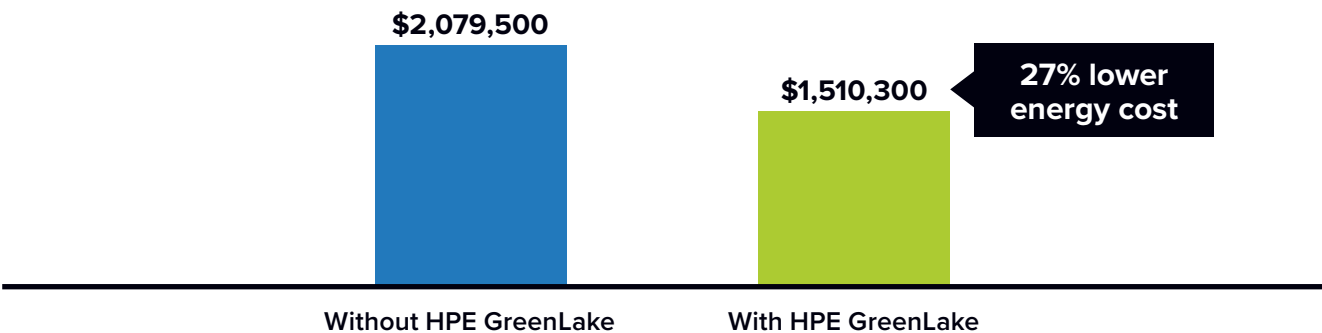
TABLE 4
Impact on Carbon Reduction

Country	gCO ₂ per kWh	Net Carbon Savings per Year (gCO ₂ e)	Net Carbon Savings per Year (Metric Tons)	Equivalent Number of Cars Taken Off the Road
United States	416.4	2,305,187,548	2,305	501
Finland	266.7	1,476,077,174	1,476	321
New Zealand	246.0	1,361,936,507	1,362	296
United Kingdom	380.4	2,105,589,052	2,106	458
European Union	408.6	2,262,098,026	2,262	492

Note: Data is also based on IDC assumptions from broader sustainability research. n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Carbon emissions reductions translate into energy expenditure savings that further boost the relative value for study participants of using HPE GreenLake. Use of HPE GreenLake has resulted in an average energy-related cost decrease of 27%, which saves over \$560,000 per organization per year in absolute terms as shown in **Figure 4**. These figures demonstrate that sustainability is a core benefit of HPE GreenLake and support the conclusion that technological innovation can lead to both environmental and financial benefits.

FIGURE 4
Energy cost per organization
(\$ per organization per year)



n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

IT Operational Efficiencies

Study participants also reported staff time savings and efficiency benefits stemming from the use of HPE GreenLake. Organizations described gaining efficiencies of scale with infrastructure purchasing facilitated by HPE, freeing up both staff time and funds that could be invested in other business initiatives. Organizations also reported that the ability to increase the overall size of their infrastructure while maintaining the same level of staffing as better-performing infrastructure and support from HPE reduce the burden on their IT teams. An infrastructure manager at a telecommunications company explained: “Our organization has been able to maintain the same datacenter head count with HPE GreenLake while growing the size of the infrastructure.”

Table 5 captures the IT infrastructure management time savings made possible by HPE GreenLake. According to study findings, the average organization will realize a 37% benefit, reducing the yearly time required for IT infrastructure management from 108.3 full-time employees (FTEs) to 68.2 FTEs, a benefit of more than 40 IT team members per organization. With the assumption of a \$100,000 yearly salary per FTE, the yearly benefits in efficiencies and productivity gains were quantified to be in excess of \$4 million per organization per year, reflecting the significant impact for study participants of investing in HPE GreenLake for their IT infrastructure management teams.

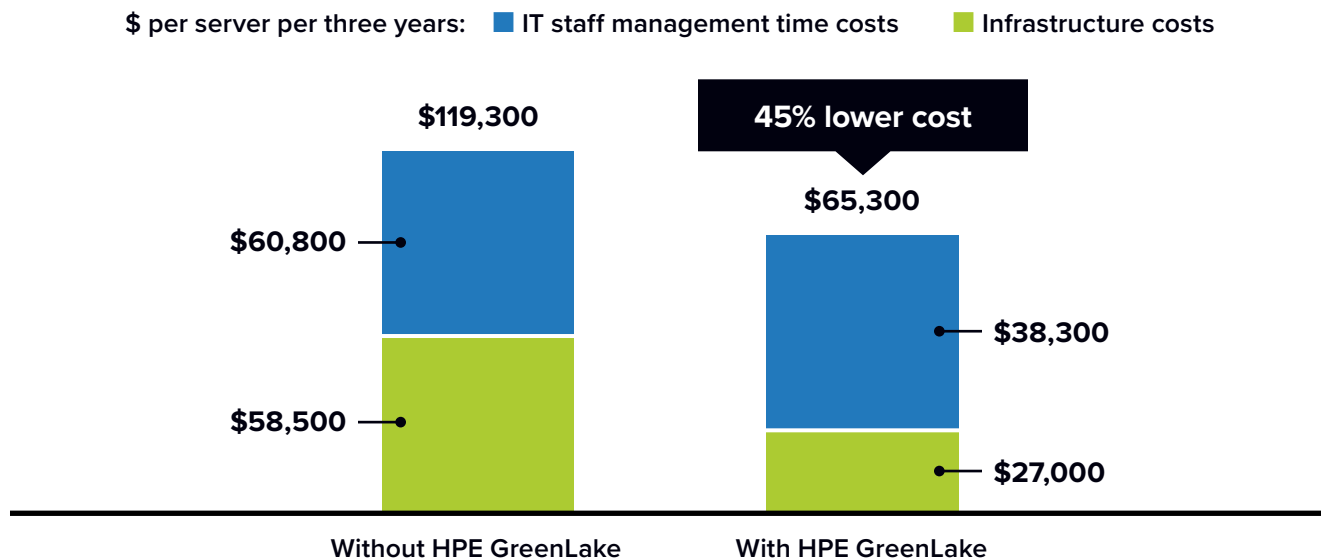
TABLE 5
IT Infrastructure Management

	Without HPE GreenLake	With HPE GreenLake	Difference	Benefit
Management of IT infrastructure (FTEs per organization per year)	108.3	68.2	40.1	37%
Equivalent value of staff time per year	\$10.83M	\$6.82M	\$4.01M	37%

Note: Data is also based on IDC assumptions from broader sustainability research. n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Figure 5 (next page) shows a comprehensive view of how interviewed organizations have reduced the total overall cost of operations with HPE GreenLake by optimizing infrastructure costs and gaining staff efficiencies. IDC’s analysis shows that they will lower the overall cost of provisioning and running a server by 45%, saving an average of \$54,000 per server. Across infrastructure environments with hundreds or even thousands of servers, these cost benefits multiply rapidly.

FIGURE 5
Cost of Operations-Impact per Server



n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

For an accessible version of the data in this figure, see [Figure 5 Supplemental Data](#) in Appendix 2.

Agility and Scalability Benefits

Through the implementation of HPE GreenLake, study participants also realized benefits related to agility and scalability. Organizations reported improvements in the time required to deploy new computation resources, storage capacity, and other areas. Further, several study participants mentioned having more available access to IT capacity with HPE GreenLake by avoiding running servers at or near capacity levels, thereby limiting their need to plan to align infrastructure requirements with availability.

Interviewed organizations provided examples of how HPE GreenLake has made their IT environments more agile and adaptable to business needs:

Ability to adjust to business demand (Director, technology implementation — Government):

“Our organization is more agile with HPE GreenLake. When we are instructed by Congress to launch a new program, we’ve been able to do so quickly.”

Improved business agility translating to better serving customers (Senior IT director — Transportation):

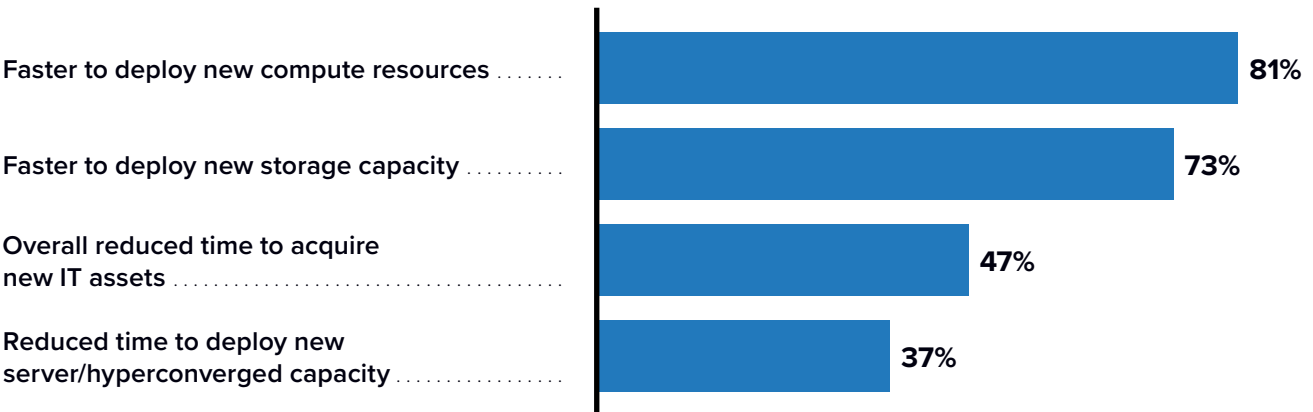
“The on-demand scalability has enabled us to provide services to our customers almost instantaneously. It has improved our organization’s customer service and the overall agility in providing IT resources.”

With a reported average reduction in time needed to deploy new compute resources (81%) and new storage capacity (73%), HPE GreenLake enables organizations to react quickly and efficiently to market demands with the added benefit of cost reduction discussed previously. Other time savings in delivering new infrastructure capacity are illustrated in **Figure 6**

FIGURE 6

Agility Benefits

(Percent less time required with HPE GreenLake)

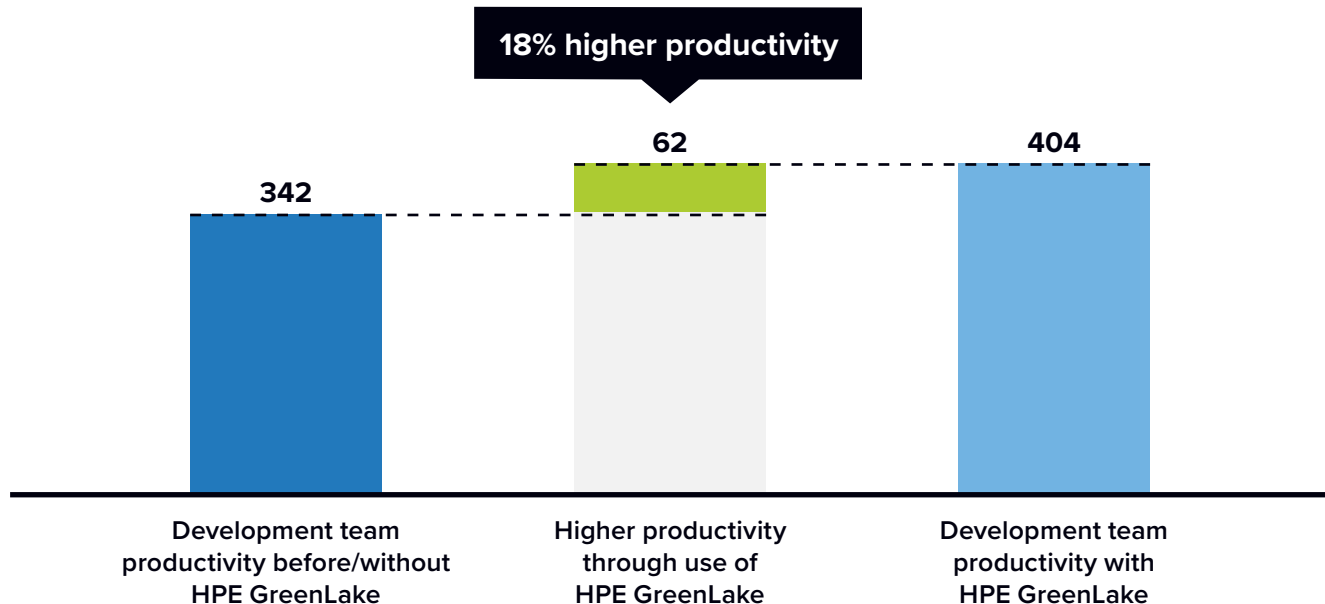


n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

A more agile and scalable IT environment is a boon for the average organization's development team. As **Figure 7** (next page) illustrates, the productivity of development teams has risen by an average of 18% with HPE GreenLake, from the baseline productivity of 342 FTEs to 404 FTEs, representing a significant productivity increase of 62 FTEs per organization. This productivity gain for developers reflects their ability to deliver more new software functionality in a timely manner to support business operations.

FIGURE 7**Impact on Development Team Productivity**

(Equivalent productivity — FTEs per organization)



n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

For an accessible version of the data in this figure, see [Figure 6 Supplemental Data](#) in Appendix 2.**Business and Operational Efficiencies**

According to the study respondents, implementing HPE GreenLake meant an improvement in terms of business and operational efficiencies. From being able to better optimize the business cash flow due to a better quantifiability of investments and revenue to infrastructure stability and availability, all of these factors ultimately result in creating an organizational environment conducive to improved performance and growth.

Interviewed organizations again provided specific examples:**Business that has better scalability and improved budgeting (IT director — Construction):**

“HPE GreenLake makes the business more decentralized and more profitable.

Our organization can invest in other areas now rather than investing only in IT. We can invest in other infrastructure projects that we would have deprioritized previously.”

Much improved performance for the business (Senior director — Manufacturing):

“The near-perfect performance and very limited downtime, none of which was caused by infrastructure within the datacenter for the last 2.5 years, enabled the business side of the company to create additional value.”

Table 6 shows that in every tracked key performance indicator associated with unplanned downtime, the average organization has seen positive benefits from using HPE GreenLake. Starting with frequency, unplanned downtime was almost 60% less common, and when it did occur, it was resolved 60% quicker than before implementing HPE GreenLake. These two compounding effects in turn made it possible for study participants to reduce the impact of unplanned downtime by an average of 86%, thereby bringing down lost productivity from 52.9 FTEs to 7.6 FTEs on average. With an assumed average yearly salary of \$70,000, the average organization saw the value of lost productivity decrease by \$3.17 million per year with HPE GreenLake.

TABLE 6**Impact on Unplanned Downtime KPIs**

	Without HPE GreenLake	With HPE GreenLake	Difference	Benefit
Frequency per year	25.8	10.7	15.1	59%
Time to resolve (hours)	2.5	1.0	1.5	60%
Hours lost per user	7.1	1.0	6.1	86%
FTE impact and lost productivity due to unplanned outages	52.9	7.6	45.3	86%
Value of lost productivity	\$3.70M	\$529,900	\$3.17M	86%

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

While quantifying business benefits, additional revenue is undoubtedly one of the major possible positive effects. **Table 7** (next page) illustrates what degree of this benefit the average organization realized. The figure of total additional recognized revenue per year of \$4.81 million was calculated by thoroughly analyzing the responses of all study participants and diligently adding up all revenue-generating benefits and discounting these by the assumed operating margin of 15%. Study participants linked revenue gains to their ability to provide more timely and higher-performing services to their customers, thereby winning new business and providing a better experience for existing customers.

TABLE 7

Business Productivity Benefits — Higher Revenue

Revenue Impact	Per Organization	Per Server
Total additional revenue per year	\$32.08 M	\$60,000
Assumed operating margin	15%	15%
Total recognized revenue per year — IDC model	\$4.81M	\$10,400

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Table 8 contains IDC research findings concerning organizational productivity benefits related to improved application performance and accessibility. In the average organization, 1,433 users benefited from an average productivity gain of 4%. This meant unlocking a gain of over 50 FTEs of previously nonavailable productivity, which means that employees work more effectively and at higher value to their organizations. IDC quantifies this as worth \$3.56 million per organization per year in higher productivity.

TABLE 8

Business Productivity Benefits — Higher User Productivity

	Average per Organization
Number of users impacted	1,433
Average productivity gains	4%
Productive hours gained per organization	14,443
Productive hours gained per user	64.3
End-user impact (FTEs per organization per year)	51.2
Value of end-user time	\$3.56M

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

ROI Summary

Table 9 compares the benefits and investments made over a three-year period by the average organization as defined by the IDC research. IDC calculates that the average organization will achieve a total discounted benefit of \$53.72 million over three years³, or \$100,500 per server, based on sustainability benefits, IT operational efficiencies, agility and scalability benefits, and business and operational gains. Compared with the three-year projected total discounted investment cost of \$12.76 million per organization, or \$23,900 per server, IDC projects that the average organization in this sample will realize a return-on-investment value of 321% and break even on the initial investment after 10 months.

TABLE 9
ROI Analysis

	Three-Year Average per Organization	Three-Year Average per Server
Benefit (discounted)	\$53.72M	\$100,500
Investment (discounted)	\$12.76M	\$23,900
Net present value (NPV)	\$40.96M	\$76,600
ROI (NPV/investment)	321%	321%
Payback period	10 months	10 months
Discount rate	12%	12%

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

Challenges/Opportunities

Organizations are always looking for ways to reduce costs and improve operational efficiency. IDC’s Business Value research demonstrates that using HPE GreenLake enables

³The discounted benefits and discounted investment costs are based on a 12% discount rate assumption, which reflects the time value of money and the opportunity cost for organizations of investing in HPE GreenLake.

organizations to improve infrastructure utilization, reduce costs, and improve sustainable IT metrics. These benefits address key challenges often addressed in IDC research. It will be important that HPE continue to focus on another key challenge for customers — keeping track of all the ESG reporting standards. Across the globe, by region and country, there are new ESG standards and legislation being introduced, and keeping track of all the changes is a daunting task. This will be a top challenge for organizations, and the vendor that can track all the metrics and help with reporting by location will emerge as the leader. HPE is able to address this challenge with the integration of OpsRamp, and we anticipate that this will be an area of focus for HPE GreenLake in 2024 and extensive expertise through their IT Sustainability Services.

Conclusion

The study discusses the sustainability benefits and business value of HPE Infrastructure solutions with HPE GreenLake. The study, conducted by IDC, involved interviews with organizations that have deployed HPE GreenLake. The findings reveal significant financial and operational gains, as well as advancements in sustainable IT infrastructures. Key benefits include more efficient infrastructures, cost-efficient and sustainable IT operating models, time savings for IT operations employees, quicker deployment of IT resources, and more stable and reliable infrastructures.

The study also highlights the demographics of the organizations involved, which comprised from large enterprises in various industries and countries. The reasons for choosing HPE GreenLake were diverse, including the desire for a managed service, sustainability, and cost and carbon footprint reduction.

The study further reveals that HPE GreenLake has led to a 36% reduction in the number of servers needed to run equivalent workloads, resulting in significant cost savings. The study also found that organizations have reduced their energy consumption by 53%, leading to substantial environmental benefits.

In terms of operational efficiencies, organizations reported staff time savings and efficiency benefits. The implementation of HPE GreenLake has also improved business and operational efficiencies, with organizations reporting improved infrastructure utilization, reduced costs, and improved sustainability metrics.

The study concludes that the average organization will achieve a total discounted benefit of \$53.72 million over three years, or \$100,500 per server, with a return-on-investment value of 321% and a payback period of 10 months. The study demonstrates that HPE GreenLake offers significant benefits in terms of sustainability, cost savings, operational efficiency, and business value.

Appendix 1: Methodology

IDC's standard Business Value/ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using HPE GreenLake infrastructure solutions.

Based on interviews with organizations using HPE GreenLake, IDC performed a three-step process to calculate the ROI and payback period:

- 1. Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using HPE GreenLake.** In this study, the benefits included IT infrastructure cost savings, IT staff efficiencies, user productivity gains, and higher revenue.
- 2. Created a complete investment (three-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using HPE GreenLake and can include additional costs related to migrations, planning, consulting, and staff or user training.
- 3. Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of HPE GreenLake over a three-year period. ROI is the ratio of the net present value and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For the purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding. All dollar numbers in this White Paper are in U.S. dollars.

Appendix 2: Supplemental Data

This appendix provides an accessible version of the data for the complex figures in this document. Click “Return to original figure” below each table to get back to the original data figure.

FIGURE 3 SUPPLEMENTAL DATA

Impact on Energy Use

	Without HPE GreenLake	With HPE GreenLake
IT asset energy consumption	5.9M kWh	2.8M kWh
Facilities-related energy consumption	4.4M kWh	2.1M kWh
Total	10.36M kWh	4.83M kWh

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

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FIGURE 5 SUPPLEMENTAL DATA

Cost of Operations Impact per Server

	Without HPE GreenLake	With HPE GreenLake
Infrastructure costs	\$58,500	\$27,000
IT staff management time costs	\$60,800	\$38,300
Total	\$119,300	\$65,300

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

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Appendix 2: Supplemental Data (continued)

FIGURE 6 SUPPLEMENTAL DATA

Impact on Development Team Productivity

	Development Team Productivity Before/Without HPE GreenLake	Development Team productivity With HPE GreenLake	Higher Productivity Through Use of HPE GreenLake
Equivalent productivity (FTEs per organization)	342	404	18%

n = 11; Source: IDC Business Value In-Depth Interviews, November 2023

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About the IDC Analysts



Matthew Marden

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Matthew is responsible for carrying out custom business value research engagements and consulting projects for clients in a number of technology areas with a focus on determining the return on investment of their use of enterprise technologies. Matthew's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

[More about Matthew Marden](#)



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Susan Middleton leads IDC's worldwide research on IT equipment, software, and services financing markets. As Research Vice President for IDC's Flexible Consumption and Financing Strategies for IT Infrastructure research, her analysis provides insight from both a supply-side and a buyers' point of view. Susan's core research coverage includes the evolution of procurement models from purchasing, leasing, and financing to the new as-a-service models, also known as flexible consumption. Based on her analysis and expertise on procurement strategies and IT equipment life cycles, Susan's research helps vendors and buyers understand the top drivers of the new flexible consumption models and the impact of these new buying behaviors on long-term IT equipment values and forecasts.

[More about Susan G. Middleton](#)



Sean Graham

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Sean Graham is a Research Director, Cloud to Edge Datacenter Trends at IDC. He focuses on providing insights and analysis to IT infrastructure vendors, datacenter and colocation providers, cloud service providers, and datacenter services firms. Hardware areas of coverage include generators, UPS, CRAC, cabling, LAN/WAN, storage, racks, and servers. Software covered includes DCIM, building automation, artificial intelligence and machine learning, and predictive analytics. Services include datacenter design, construction, and running and operating of datacenters. All the above coverage areas will have an overarching theme of sustainability and trust. Sean draws on 25 years of industry experience to provide insights and actionable advice to assist vendors in developing, marketing, and delivering datacenters.

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Bjoern Stengel is IDC's global sustainability research lead. His research focuses on how environmental, social, and governance topics impact and shape business strategies and technology usage. He provides insights into market opportunities, adoption strategies, and use cases for sustainability-related technologies and services. Bjoern helps IDC's clients understand the impact of technology-enabled, sustainable transformation processes in the context of sustainable business strategies, operations, and products and services through research reports, news publications, and speaking engagements at industry events such as Climate Week NYC. Bjoern also supports IDC's Worldwide Business Consulting and Environmental, Social, and Governance Business Services research.

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