Data Center Growth Depends on Sustainability

By: Trent Anderson

It is difficult to find an industry that has been impacted by the need for sustainability more than data centers. Storage capacity requirements are growing, and 90 percent of organizations are putting their data in the cloud. With the demand for connected data increasing from users, data center providers should focus on taking steps to reduce, if not eliminate, their carbon footprint while meeting the rising demand for connectivity services.

Increased need for data connectivity

Data centers are not a luxury but a necessity for our daily lives as we face a virtual shift, driven by the need for instant, real-time data. We have seen the rise in the increase of data through industries like telehealth and content marketing, not to mention the slew of businesses that use data centers within their work-from-home (WFH) operations. Data centers need to work efficiently to ensure these businesses can operate constantly while at the same time ensuring they implement sustainable practices, from power consumption to recycling. Data centers are the crossroads for connectivity; as the need for connectivity increases, so does the need for data center capacity and scalability. Data centers are expected to grow at an annual compound growth rate of two percent per year.

Facebook alone is building 47 new data centers in addition to its current 18 worldwide data hubs. While individuals and companies alike are taking advantage of the many benefits of data facilities connecting us, this comes at a price. As companies expand their digital footprint, it increases their carbon footprint if data centers continue to slack on prioritizing and implementing sustainable solutions throughout their day-to-day operations. Some reports estimate that the entirety of the

data center industry uses [90 billion kW hours of electricity each year](#), leaving a significant impact on the environment.

With these facilities consuming a large amount of power and releasing greenhouse gasses into the atmosphere, data centers must become more sustainable to continue the growth at their current rate. Without an increase in eco-friendly facilities, data centers that don't prioritize sustainability are at risk of losing business as more companies seek to become carbon neutral and sustainability measures become expected rather than a bonus. Hyperscale companies, like Amazon, [have pledged to become carbon neutral](#) within the coming decades, which requires data centers to keep up with the critical trend.

Implementing sustainability measures in both the building and daily operations of data centers fosters further growth in the industry, for local communities, and our ecosystem. It's no surprise that more data center companies are implementing sustainable solutions and making commitments to become carbon negative in the next couple of decades.

Prioritizing sustainability efforts

With a heightened concern about the effects of data centers on the environment, these facilities are increasingly prioritizing the use of renewable energy and creating innovative solutions. This not only makes these facilities run more efficiently and effectively, but also supports the needed growth of data centers for years to come.

For example, many data center operators do not monitor water usage at any level, which raises concern because a typical data center utilizes about [three to five million gallons](#) of water per day. Microsoft has recently taken another step in the evolution of its sustainability initiative. The company's goal is by 2024, to [reduce the amount of water used in data center operations](#) by 95 percent and improve its power usage. Reduced water usage in data centers also poses new opportunities. Communities in areas regularly affected by droughts, which have often pushed back against data centers, may be able to welcome these facilities. Alternatively, building data centers in colder climates may even remove the need for water entirely, especially as new technologies emerge. Hopefully, other data center operators will follow suit, tracking and reducing their consumption of water and other resources negatively impacting the environment.

At the same time, only a third of operators monitor their carbon impact or e-waste and its impact on their operations. Again, companies like [Microsoft](#) understand they must improve the sustainability of their operations to keep up with growth. Many parts of the world do not have the resources to run these facilities, but thanks to evolving sustainability practices, this is now changing. This means using less carbon-intensive materials, like algae to make bricks or mushrooms to make structural tubes

Eventually, there will be blowback on current data operations, and a significant loss can be faced if eco-friendly efforts are not in place. This has led to the steady adoption of environmental, social, and governance sustainability efforts in businesses and everyday life.

A need for ESG

ESG, which refers to environmental, social, and governance, has become more common than ever before. Over 2,000 companies have recognized the need for more sustainable data centers and now issue sustainability reports. In these reports, companies set science-based carbon target goals, and about one-third of companies in the UK have pledged that their organization will reach net zero by 2050. Events such as global climate talks falling short, an explosion of ESG in the mainstream, and problems with supply chains have put more focus on sustainability across various industries, especially the data center industry.

The call for ESG is not expected to end anytime soon with the rise of movements bringing attention to the need for sustainability in operations. This has led to increased standards and regulations affecting how data centers operate and how data center companies should build their facilities. With the growth of data centers throughout the world, current facilities will need to be transitioned into sustainable facilities, and new data centers must be constructed with ESG in mind. Any company can create an ESG strategy by taking steps including setting company goals for sustainability and success, evaluating opportunities, building a budget and constructing an ESG framework, creating a sustainability team, and promoting sustainability performance to further (and monitor) ESG efforts.

Incorporating more sustainability into data centers

The need for sustainability in every aspect of life, especially data centers, is undeniable. If data centers want their company to grow into the future, they need to scale their operations to reduce water and focus on their net-zero efforts to be most successful. With hyperscale leaders in the industry such as AWS, Google, and Microsoft creating more data centers with sustainability in mind, the rest of the world must keep pace. While not every company can develop new sustainable technologies in the way companies like Microsoft have, organizations can introduce multiple sustainability efforts into their operations with minimal strain.

These can include measures like recycling equipment and getting the most out of their daily operations. Certain pieces of hardware must be adapted for the best performance, but many pieces of equipment can be recycled and reused in data centers for years.

Data centers can adjust the air conditioning to 78. This enables optimal temperature—any lower is not beneficial to heat reduction. Reducing or eliminating the need for in-facility chillers by building with the natural environment in mind can also reduce energy costs.

Incorporating renewable energy such as solar panels or even running generators on solar energy cuts down on pollution and the costs spent on fuel. Even if data centers can't go completely renewable, replacing a few gas generators with clean energy has a noticeable impact on sustainability and costs.

Data growth via sustainability

The data center industry is booming, but sustainability will need to be adopted in facilities globally for this success to continue. As it's becoming increasingly expensive to manage data in-house, many companies are switching operations to the cloud, driving an increase in outsourcing to data centers. With the data center market expected to reach over $69 billion by 2024, sustainability is the only way to continue data success into the future and to keep our environment safer.