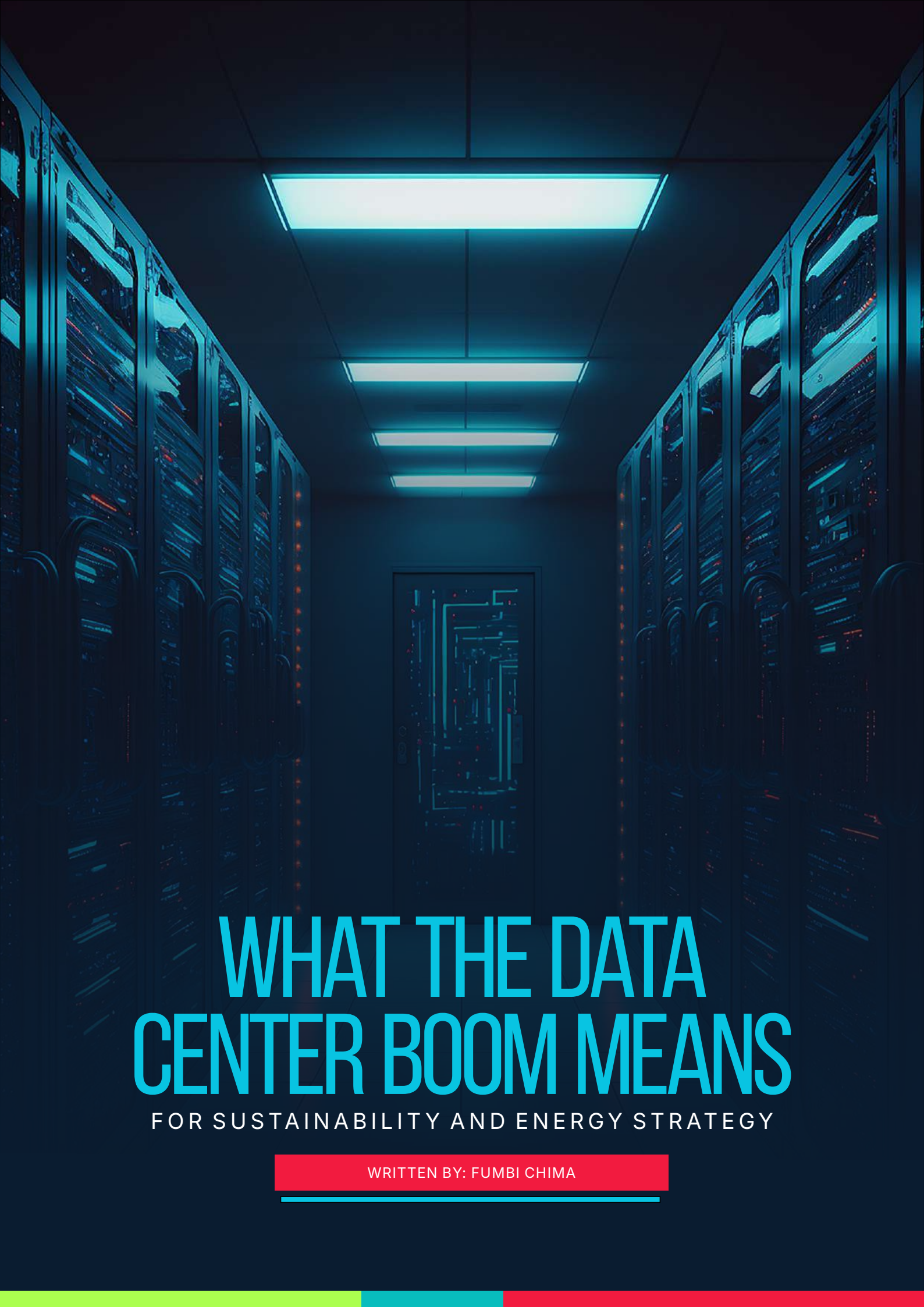




WHAT THE DATA CENTER BOOM MEANS

FOR SUSTAINABILITY AND ENERGY STRATEGY

WRITTEN BY: FUMBI CHIMA

WHAT THE DATA CENTER BOOM MEANS FOR SUSTAINABILITY AND ENERGY STRATEGY

In the context of global technology, there's an unusual irony that affects the way we view our digital future. The building blocks and infrastructure that enable our digital future are data centers. At the same time, as they become one of the most energy-consuming components of that future, they have created some tension.

This is perhaps most evident when meeting with stakeholders and during strategic discussions on growing the industry's expected growth rates. The growth rate projections may be exciting. However, the accompanying energy models often cause people to shift uncomfortably in their seats.

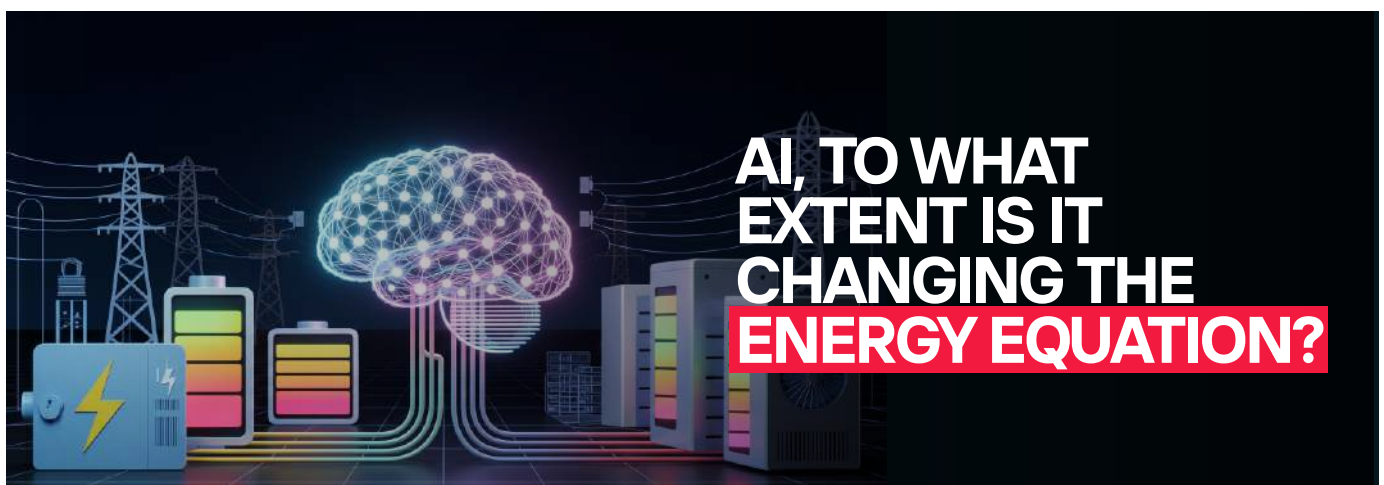
The data center boom has reached threshold levels and has become tangible and visible e.g in

NORTHERN
VIRGINIA

DUBLIN

AFRICA

Being in different stages of catching up to the growth potential of the region). However, scaling associated compute usage is straightforward and relatively simple; the issue is scaling the associated energy responsibly.



Generative AI has created a new factor in the equation because of the vast requirement for computing resources compared to previous generations of workloads when applying generative AI.

This difference is measured in actual energy consumption and is occurring now not at some unknown point in the future.

However, much of the current discussions around energy strategy are limited to "**renewables vs. non-renewables**," which doesn't tell the whole story, as they all have tradeoffs

RELIABILITY 

COST 

REGULATION 

LAGS/DELAYS 

For example, having a data center powered by solar energy sounds great, but when we factor in the intermittency of solar and storage limitations, it may not be quite as stable as we thought.

Companies are hedging their bets. They are seeking to develop hybrid energy models; long-term power purchase agreements; they are exploring nuclear energy in some locations. It is less about purity and more about reliability over the long term.



Data center location has traditionally been based on **tax incentives, latency, etc.**; this paradigm is changing in that energy availability is now becoming one of the primary factors in determining location.

For example, in Africa, there are distribution opportunities that can allow for leap-frog capabilities to deliver energy needs; this may be through the use of strategically locating renewable energy resources to provide energy from distributed generation (e.g.,

REGIONAL RENEWABLE GRIDS

LOCAL COOLING INNOVATIONS

PARTNERSHIPS WITH
LOCAL GOVERNMENT

However, most multinational corporations underestimate the complexity of this issue; they assume whatever solution may work in Germany will also work in Nigeria.

While this assessment is not valid, the items that can vary considerably include the number of components in the local power grid, the variations in grid delivery rates, degree of regulatory support

POLICY DEVELOPMENT CYCLES

Or new data centers, the value of the relationship with the local partners

ESTABLISHING LOCAL SUPPLIERS OF MATERIALS

DATA CENTERS

SUSTAINABILITY AS A CONSTRAINT ON DESIGN VERSUS SOMETHING TO REPORT

Through experience, I've learned that sustainability should be an integral part of architecture decisions and should not be viewed as merely a reporting function. Sustainability should be evaluated when making early architectural decisions concerning the design of energy systems

SERVER DENSITY

WORKLOAD DISTRIBUTION

Additionally, there is an element of culture that needs to be factored into the equation; i.e., engineers need to develop the same mindset for efficient operation as they would in ensuring uptime and reliability.

Culture will not shift solely through edicts, but by evaluating the definition of success with regard to sustainability.



As we look to the future, it is becoming clear that energy strategy and digital strategy will eventually evolve to become one in the same, which is not intended to be dramatic, just simply accurate.

Those organizations that can create this connection between energy strategy and digital strategy will likely not be the same ones with the largest volume of data centers. Instead, they will design both their technical and organizational constructs in a way that allows them to be flexible as elements of either their energy or digital strategy evolve.

There will be mistakes made along the way, without question. However, it's all part of the journey.

About the Author

Dr. Fumbi Chima is a global technology executive who has led digital and operational transformation initiatives at industry-leading brands including adidas, Burberry, Walmart, Boeing Credit Union, and Fox Networks. Her experience spans P&L ownership, M&A, operations, and enterprise technology leadership across retail, CPG, digital, and financial services.

She is widely recognized as an AI thought leader with a strong reputation for aligning innovation with business goals to deliver sustainable value and competitive advantage. At adidas AG, she spearheaded large-scale infrastructure and process transformations, achieving cost savings, accelerating speed to market, and enabling cross-market scalability.

Known for bridging the gap between technology and business, she fosters high-performance cultures rooted in innovation, accountability, and transparency. Her leadership has consistently increased employee engagement and organizational impact.

Throughout her career, she has championed innovative solutions in data strategy, digital marketing, and cybersecurity, always with a relentless focus on driving growth and enhancing customer experience.



Fumbi Chima

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