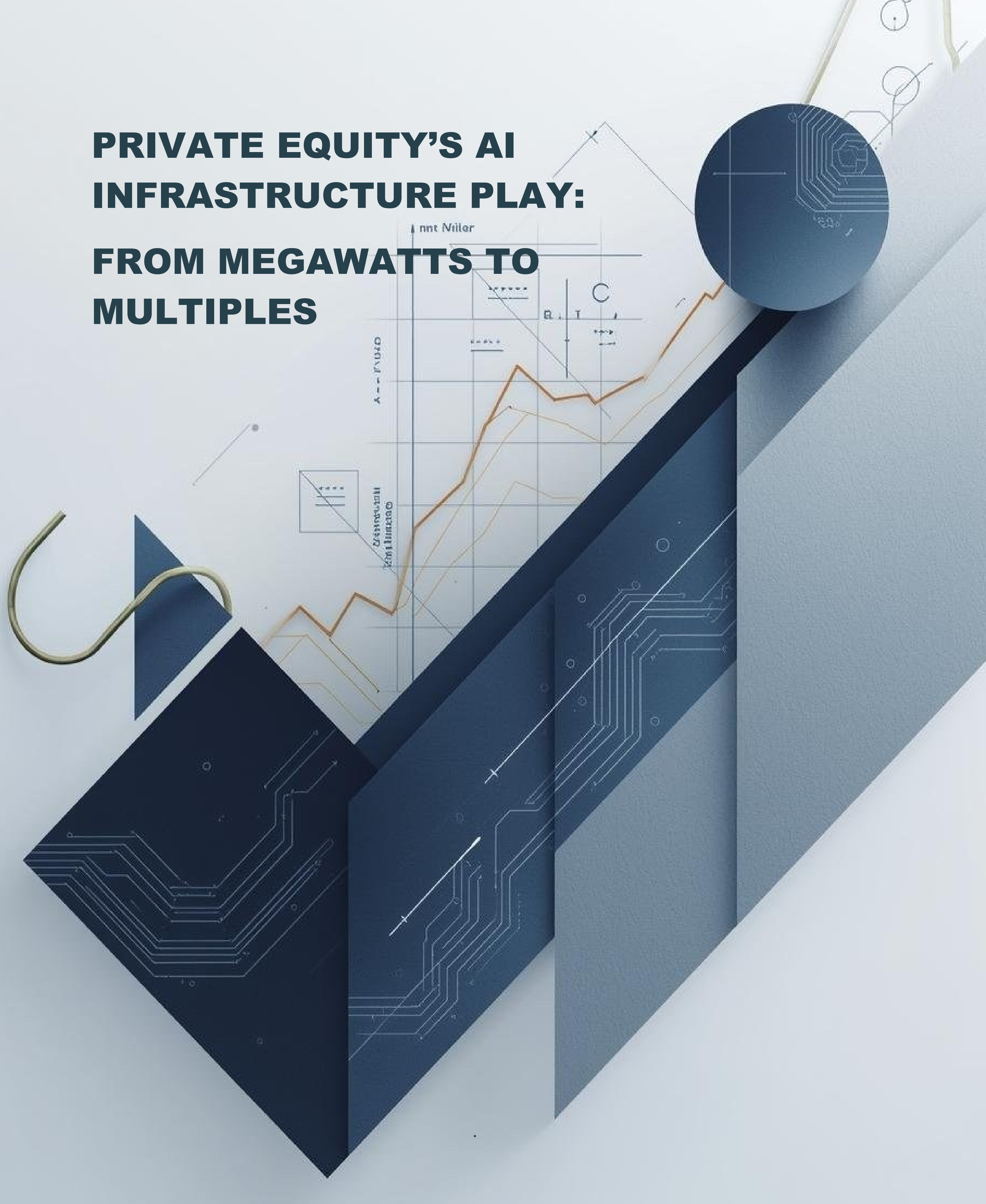
PERSPECTIVE | SEPTEMBER 2025

PRIVATE EQUITY'S AI INFRASTRUCTURE PLAY:

FROM MEGAWATTS TO MULTIPLES



Introduction: Why Now

Artificial intelligence has moved from the realm of speculation to an undeniable economic driver. What was once discussed in terms of algorithms and model accuracy is now constrained by something much more fundamental: **the infrastructure needed to power it.** Compute capacity, data centers, energy supply, and cooling are no longer technical details; they are macroeconomic bottlenecks.

Over the past year, we've argued that AI is not just a technology trend, it is a board-level governance challenge. In *The Next AI Imperative: Capacity* (May 2025), we highlighted that compute and energy availability, not algorithms, will define competitive advantage. In *Geopolitics and the AI Power Play* (May 2025), we showed how AI is now a sovereign-grade asset, subject to export controls, regulatory fragmentation, and supply chain volatility. And in *Capacity, Geopolitics, and Sustainability* (April 2025), we brought these threads together, pointing to the **triple challenge boards must confront: securing capacity, navigating geopolitical fractures, and aligning with sustainability demands.**

Private equity sits at the intersection of all three imperatives. The capital-intensive build-out of AI infrastructure — hyperscale data centers, energy partnerships, chip supply, and cooling innovations is increasingly being financed, structured, and governed by PE.

What's more, PE has the distinctive ability not just to build capacity but to accelerate adoption across portfolio companies, turning infrastructure into operational leverage. The numbers tell the story:

- In the U.S., DigitalBridge, Silver Lake, and Vantage are financing a $25 billion AI data center campus in Texas, with nearly $22 billion of debt underwritten on a scale usually reserved for sovereign projects.
- In Europe, Brookfield has committed €20 billion to French AI infrastructure via its Data4 platform, even as local regulators in Ireland and the Netherlands impose moratoria on new builds.
- In Asia-Pacific, Macquarie-backed AirTrunk refinanced A$16 billion in sustainability-linked loans to expand its footprint in Singapore, Japan, and Australia, while KKR pursues a $5 billion stake in Singapore-based STT GDC.
- In the Middle East, sovereign wealth funds like ADIA, Mubadala, and PIF are co-financing AI-ready campuses powered by solar, hydrogen, and nuclear, positioning themselves as energy-rich hubs for compute.

This global wave creates extraordinary opportunities but also extraordinary risk. Assets can just as easily become stranded if boards fail to anticipate power shortages, regulatory shifts, or technological obsolescence. The challenge for PE boards is not whether to invest, but how to **turn megawatts into multiples** through disciplined underwriting, resilient governance, and portfolio-wide value creation.

Underwriting the Global AI Infrastructure Bet

Traditional diligence frameworks fall short when applied to AI infrastructure. Directors must now interrogate not just lease-up assumptions but the full stack of risks: revenue resilience, energy access, regulation, financing, and technology curve dynamics.

1. Revenue Resilience

Leasing remains the lifeblood of data centers, but the profile is shifting. In North America, hyperscalers like Microsoft and Google often pre-lease entire facilities. This provides immediate revenue certainty yet creates tenant concentration risk, where the exit depends on a small handful of global buyers. Europe presents a different picture: shorter leases, stricter ESG disclosure obligations, and cautious pre-commitments due to regulatory scrutiny. Asia-Pacific is more complex still, with demand surging in Tokyo, Mumbai, and Singapore but constrained by land scarcity and localization laws.

Board lens:

- What percentage of revenue is pre-committed versus speculative?
- How concentrated is the tenant base, and how resilient is cash flow if one hyperscaler renegotiates?
- Do exit options extend beyond hyperscalers such as REITs, infra funds, or sovereign wealth buyers?

2. Power as Destiny

Energy availability has become the decisive factor in underwriting. Rack densities now exceed 250kW, and training large AI models consumes as much energy as small cities. Without guaranteed access to reliable, carbon-conscious power, projects risk failing before they start.

In the U.S., Blackstone's QTS has pioneered long-term partnerships with utilities in Iowa and Pennsylvania to lock in decades of supply. Europe, by contrast, faces grid congestion and outright political restrictions; Dublin has paused new connections until 2028, and Amsterdam has capped hyperscale growth. Asia-Pacific shows both opportunity and constraint: Singapore has cautiously reopened its pause on new data centers but ties permits to strict sustainability quotas, while Australia offers abundant renewable energy for export-oriented campuses. In the Middle East, AI data centers are being co-sited with massive solar or nuclear projects, branding themselves as "carbon-neutral compute hubs."

Board lens:

- Are we securing long-term power purchase agreements (PPAs) or virtual PPAs (VPPAs) that hedge against price volatility?
- How exposed are our assets to grid congestion or political moratoria?
- Do we have a fallback plan? such as onsite generation or utility joint ventures — if primary supply fails?

3. Regulatory and Geopolitical Headwinds

AI infrastructure is now entangled in geopolitics. Data centers are no longer viewed simply as commercial real estate but as **strategic national assets**.
In the U.S., federal incentives encourage expansion, but states like Oregon and Arizona scrutinize water consumption, limiting new approvals. The EU enforces dual compliance: carbon disclosures under the Green Deal and forthcoming AI Act obligations. In Asia, India requires strict data localization, keeping workloads within national borders, while China ties approvals directly to state-aligned AI priorities. Singapore's permitting regime awards scarce slots to projects with the strongest sustainability credentials.

Board lens:

- Which jurisdictions carry latent regulatory or political risks that could derail timelines?
- Have compliance and disclosure costs been properly embedded into IRR assumptions?
- How do export controls on chips, particularly U.S.–China tensions, affect demand forecasts and site viability?

4. Financing Innovation

The capital required to build AI infrastructure dwarfs traditional project finance. The response has been a wave of financing innovation.
AirTrunk's $16 billion sustainability-linked refinancing set a new record, tying financing terms to environmental performance. In Texas, debt underwrites of $22 billion approach sovereign scale, demonstrating investor appetite for AI infrastructure as a new asset class. Meanwhile, private credit arms like Blackstone Credit are stepping in to provide billion-dollar facilities, blurring the lines between infrastructure, private equity, and private credit.

Board lens:

- Do our capital structures include flexibility such as refinancing triggers or continuation vehicles if market conditions shift?
- Are sustainability-linked covenants structured as value enhancers, or do they risk constraining operational flexibility?
- How diversified is our investor base across infra funds, sovereigns, private credit, and strategic partners?

5. Technology Curve Risk

Perhaps the most under-appreciated risk lies in the technology curve. Demand forecasts often assume linear growth in GPU consumption. Yet breakthroughs in efficiency, model compression, or cooling technology could radically shift utilization.
Boards must recognize that today's capex decisions may lock investors into infrastructure that becomes obsolete. For example, liquid immersion cooling and direct-to-chip cooling are racing to become standards but the wrong bet could mean billions in stranded assets. Similarly, inference efficiency gains may reduce GPU intensity, flattening demand curves that currently appear exponential.

Board lens:

- What is the stranded-asset risk if rack densities double within 24 months?
- Are depreciation schedules realistic, or are they lagging behind technology change?
- Have downside efficiency scenarios been stress-tested as rigorously as growth cases?

Beyond Bricks: Portfolio Acceleration as Alpha

Private equity's unique advantage lies not only in financing infrastructure but in using it to **accelerate portfolio performance.** Compute capacity can become a moat across an entire fund, not just a single asset.
Shared GPU blocks allow funds to allocate compute across multiple portfolio companies, lowering costs while differentiating their holdings. Centralized AI Centers of Excellence create standardized playbooks for adoption, ensuring that AI is deployed consistently and responsibly across operating companies. And by embedding AI into pricing, supply chains, and working capital management, funds can unlock **outsized returns. Bain estimates 2x faster adoption with centralized COEs, while McKinsey projects up to 10x ROI across portfolios.**

Board lens:

- Do we have a repeatable, fund-level AI adoption strategy?
- How are we measuring AI ROI across portfolio companies, and are those metrics board-visible?
- Can compute access itself become a shared utility and competitive advantage across our holdings?

Governance: The Global Board Imperative

AI infrastructure cannot be governed as a traditional asset class. Boards must recognize it as simultaneously **operational, geopolitical, and ethical.**
That means oversight must stretch beyond financial performance into areas like:

- **Energy Security:** Redundancy across grids, jurisdictions, and energy sources.
- **Geo-Regulatory Risk:** Exposure to localization rules, export controls, and AI regulations.
- **Sustainability:** Transparent disclosures on carbon intensity, water usage, and electronic waste.
- **Scenario Planning:** Stress-testing both exponential GPU growth and efficiency-driven contraction.
- **Exit Optionality:** Understanding the buyer universe, the hyperscalers, infra funds, sovereigns, REITs and aligning governance to preserve strategic value at exit.

The Boardroom Toolkit

To operationalize this, boards should insist on:

- **Supply chain maps** of chips, cooling technology, and energy sources.
- **ESG dashboards** aligned with LP scrutiny and regulatory standards.
- **Scenario matrices** that model moratoria, energy shocks, and efficiency breakthroughs.
- **Portfolio AI adoption scorecards** to track value creation across holdings.
- **Exit playbooks** with clear strategies for different buyer classes and geographies.

Conclusion: Stewardship at Scale

The AI era's winners will not be defined only by who builds the best models. They will be defined by those who **govern the infrastructure that powers them.**

For private equity, this is both opportunity and responsibility. Capital is being deployed at a sovereign scale, but without disciplined governance of power, regulation, sustainability, and technology risk; those megawatts may never become multiples.

As advisors and board members who have written extensively on *The Next AI Imperative* and co-led conversations on AI's governance, we bring a tested framework: one that integrates capacity, geopolitics, sustainability, and portfolio acceleration into board oversight.
For PE boards and ICs, the imperative is clear: steward AI infrastructure with foresight, discipline, and resilience. The task is not simply to finance the future, but to govern it.

About the Authors

Andreea Bulisache

Andreea Bulisache is a global tech executive and strategist whose work sits at the intersection of AI governance, strategic growth, and value creation. A former Microsoft leader, she scaled multi-billion-dollar partnerships and drove complex integrations such as GitHub and Databricks, translating innovation into measurable business outcomes. Today, as Founder of Stratified Advisory, she partners with private equity firms, scale-ups, and boards to accelerate portfolio performance, sharpen go-to-market strategies, and prepare companies for scale and exit. Boards and leadership teams rely on her to translate complex shifts in AI, digital regulation, and cyber risk into board-ready frameworks and decision tools — bridging the gap between regulators, technologists, and directors to ensure governance becomes a driver of trust and competitive advantage. She also serves as Chair of Young & Bold and on the International Advisory Board of Nyenrode Business University, and as a graduate of the Harvard Business School Women on Boards Program, she brings a forward-thinking lens to the evolving intersection of technology, geopolitics, and long-term boardroom resilience.

Fumbi Chima

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.

References

- Blackstone, *Investing in AI Infrastructure*
- Deloitte, *Data Center Infrastructure and AI*
- Bain & Co, *Global Private Equity Report 2025*
- McKinsey, *AI Strategy Playbook*
- Reuters, *Asia Data Centre Deals Surge as AI Growth Beckons*
- S&P Global, *Private Equity Makes Infrastructure Play in AI*