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A MONTHLY INTELLIGENCE BRIEF

DEEPTech VELOCITY

Decoding the **technologies** and **structural shifts** accelerating the future

THE NEW 'AI INFRASTRUCTURE' RACE: BUILDING THE INTELLIGENCE ECONOMY

The Macro Shift

For much of the last decade, the technology economy was built on a software-centric playbook. Scale came from asset-light business models, code, distribution and network effects. Capital intensity declined, marginal costs approached zero, allowing software companies to build with remarkably little physical infrastructure. AI is fundamentally rewriting that equation. Competitive advantage is increasingly being determined by the capital-heavy infrastructure capable of powering intelligence at scale.

" Every model demands land, gigawatts of power, semiconductors, fibre networks, cooling systems and high performance compute. "

Global data center hyperscalers including Alphabet, Amazon, Meta and Microsoft are projected to deploy **more than \$725B** in capital expenditure in 2026 alone to build capacity, an increase of 77% y-o-y. Nowhere is that shift more visible than India. Amazon, Microsoft and Google have collectively committed nearly **\$57B** to expand their cloud and AI infrastructure footprint.

India's Data Centre Gold Rush

India generates nearly 20% of the world's data, yet it has historically hosted just 2–3% of global data center capacity. That asymmetry is rapidly dissolving. Driven by strict data localization mandates, geopolitical dynamics and exponential domestic enterprise demand, over **\$5 billion** has been deployed into India's data center sector over the past three years, doubling capacity from 800 MW to 1.6 GW.

The forward trajectory is even steeper: this current footprint is projected to surge to **10 GW by 2030**, unlocking an estimated **\$60B - \$100B** in global and domestic capital commitments, solidifying the country's most aggressive technology frontier.



Capital Driving India's AI Infra Boom

- CPP Investments has committed \$740M to CtrlS to expand hyperscale capacity and strengthen data infrastructure.
- Alpha Wave, Carlyle & Anchorage Capital invested \$710M in Nxtra, with Airtel contributing a further \$290M, taking the total transaction to \$1B.
- Sify secured IFC support for two new AI-ready facilities in Navi Mumbai and Chennai with a combined 103 MW capacity.
- TCS entered the market with HyperVault, underscoring the growing demand for sovereign cloud infrastructure and advanced computing.
- Adani Group has made \$100B commitment to build renewable-powered, AI-ready infrastructure through AdaniConneX.
- Reliance Industries is developing a 3 GW AI-enabled campus integrating renewable energy, cloud infrastructure and large-scale compute capacity.
- Submer is investing \$2B in a liquid-cooled data-centre facility in Madhya Pradesh.

Structural shifts leading the change

- **Geopolitics turned compute into a weapon:** Russia–Ukraine exposed the fragility of energy and supply chains. The Iranian strikes on Amazon's facilities in the UAE showed that digital infrastructure is now a strategic target. And the US-China rivalry has already turned advanced chips into instruments of statecraft, gated by export controls. India offers a neutral, secure and massive sovereign market to de-risk global infrastructure.

Key factors redrawing the map of compute in India



Export Controls & Chip Bans

Choke-point Supply Chains

Digital Sovereignty

- **Policy is accelerating build out:** Infrastructure status for data centres, the Semicon India programme, data-localization, IndiaAI mission, rise of sovereign Indic AI are strengthening the domestic ecosystem. State governments are also offering electricity duty exemptions, land subsidies and long-term tax incentives to support long-term capital deployment.
- **Unit economics and cost arbitrage:** Traditional hubs such as Singapore, Frankfurt and Silicon Valley are facing mounting power constraints, increasing costs and time to market. India, by contrast, offers expanding renewable energy, development costs that are up to 40% lower than those in Western markets.

As India scales compute, questions around energy, water, land and grid capacity are becoming increasingly difficult to separate from the AI investment thesis - raising concerns around how sustainably India can build the physical backbone of its AI economy. With data-centre capacity concentrated in several water-stressed states, site selection, cooling efficiency and resource availability could increasingly influence the pace and economics of new capacity.



The Physical Bottlenecks Behind India's Compute Build-Out

- “India’s AI infrastructure opportunity is often framed through capital commitments and capacity targets. We believe the physical constraints will ultimately determine how quickly India can translate that ambition into operational capacity.
- **Grid Interconnection & Power Availability:** Frontier-scale training clusters require dedicated power allocations in the hundreds of megawatts, comparable to large industrial loads. India's transmission infrastructure, still catching up on renewable integration and grid stability more broadly, faces longer interconnection and substation upgrade cycles for these step-loads.
 - **Thermal Density & Water Stress:** India's ambient climate makes traditional air-cooling markedly less efficient than in temperate data centre hubs (e.g., Northern Europe, Canada), pushing operators toward liquid and immersion cooling sooner in the technology cycle. This creates a direct tension: several of India's emerging data centre corridors (parts of Maharashtra, Tamil Nadu, and NCR) sit in regions already facing water stress, meaning cooling technology choices are becoming as much a water-policy question as an engineering one.
 - **Land, Power Sourcing & State-level dependencies:** Unlike software infrastructure, data centre buildout is tied to physical siting decisions — proximity to renewable generation, land acquisition timelines, and state-level policy consistency (electricity duty exemptions, land subsidies) all vary significantly across states, creating execution risk that is more regulatory/logistical than technological.
 - **Sovereign & edge compute:** Real-time industrial automation, autonomous systems, and defence platforms require latency levels that centralized cloud infrastructure cannot support. This is the latency barrier the IndiaAI mission is addressing through a more distributed compute model, recognition that India's ambitions depend on capacity that is not just large, but sovereign, localized, and deployed at the edge.



The Argan Perspective

Venture capital's software-era playbook, built on frictionless distribution, near-zero marginal cost and structurally high margins, does not transfer to the Intelligence Economy. Compute is now physical capital, governed by thermodynamics and materials science, not code.

Sovereigns and hyperscalers will fund the shell facilities, fibre, and power contracts. Argan's view is that the more durable equity returns will sit one layer up in the proprietary hardtech IP that makes that physical capacity efficient, scalable, and sovereign:

- **Thermodynamic efficiency** - liquid and immersion cooling replacing legacy air systems
- **Interconnect scaling** - optical I/O and advanced packaging addressing the copper bottleneck
- **Sovereign edge compute** - low-power, hardened processing for defence, robotics, and aerospace, independent of foreign cloud infrastructure

India's move from ~2-3% of global data centre capacity toward a targeted 10 GW by 2030 is not just a capacity story, it is a greenfield opportunity to build compute infrastructure that is efficient, resilient, and sovereign from first principles.



Further Reading and References

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