Paper 1 — The Intelligent Economy

In Paper 0 we argued that intelligence has become computable at scale. When cognition becomes scalable, it stops being a feature of software and becomes a condition of the economy.

At scale, a capability becomes infrastructure. When that happens, economic structure adjusts around it. Steam reorganised manufacturing. Electricity reorganised production and cities. Semiconductors reorganised communication and computation.

Scalable intelligence is entering the same phase. It requires dedicated infrastructure. It consumes energy at industrial scale. It expands productive capacity. It reshapes firms and industries. It influences capital allocation and national strategy.

This adjustment is already underway.

Intelligence Becomes Infrastructure

Software scaled through distribution. Intelligence scales through physical systems.

Modern AI depends on specialised processors, dense networking and purpose-built data centres. These systems are trained on large compute clusters and operated continuously. As usage grows, capacity must grow with it. Intelligence no longer runs on spare infrastructure. It requires its own.

Microsoft, Amazon, Alphabet and Meta are committing tens of billions of dollars to compute capacity, advanced chips and long-term power agreements. These are sustained industrial programmes.

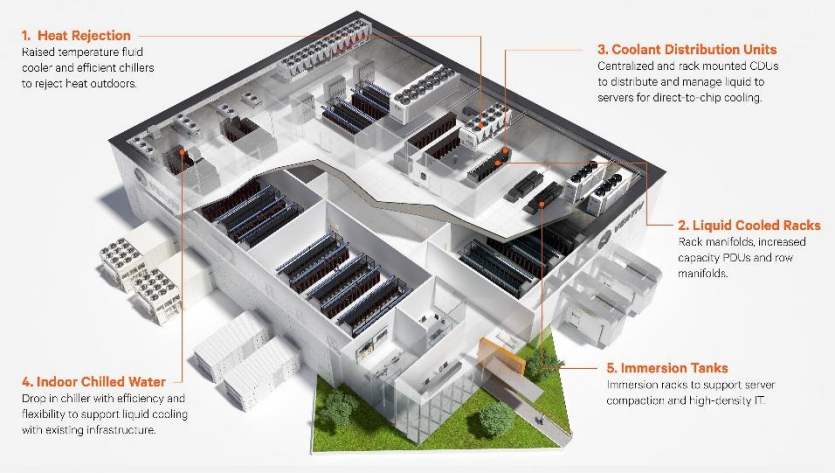
As intelligence scales, infrastructure expands — and the balance sheets already show the shift.

Energy is the constraint

Infrastructure scale translates directly into electricity demand.

AI systems consume power during training and continuous deployment. Data centres supporting advanced models operate as large industrial facilities. Global data centres already account for roughly 1–2% of global electricity demand — and that share is rising as AI workloads expand. The relationship is simple: more intelligence requires more compute; more compute requires more electricity. Intelligence at scale depends on physical capacity — power, land and grid infrastructure. Regions able to provide reliable, abundant electricity attract investment. Regions that cannot face limits.

As compute density increases, thermal management becomes more demanding. In many regions, advanced cooling systems depend on reliable water supply. Water availability is therefore emerging as a planning constraint alongside electricity and land. Regions able to provide sustainable cooling capacity will attract investment; regions facing water stress may encounter limits.



The intelligent economy is grounded in physical systems.

Productivity increases

Infrastructure and energy matter because they enable output. Historically, infrastructure investment precedes measurable productivity gains. Electrification followed this sequence. Computing followed this sequence.

Scalable intelligence increases the productive capacity of knowledge work. AI systems assist with analysis, coding, modelling and optimisation. Iteration cycles shorten. Decisions incorporate more information. The result is leverage. Smaller teams accomplish more. Firms experiment faster. Time to market compresses.

Capital is deployed ahead of measurable productivity. Diffusion takes time — but history shows that infrastructure-led transitions eventually translate into output. As intelligence spreads, aggregate output will rise.

Organisations adjust

Increased productive capacity reshapes organisations.

Routine cognitive tasks are automated or assisted. Roles centred on coordination and document production decline in relative importance. Roles focused on judgment, integration and system design expand. Firms become flatter. Decision cycles accelerate. Fewer individuals manage larger domains with machine support. Executive attention shifts from headcount management to system design.

This is not incremental automation. It is a reconfiguration of cognitive work.

Industries reconfigure

Adoption is uneven, but the direction is consistent.

Information-intensive sectors — software, finance, defence, pharmaceuticals and media — integrate scalable intelligence first. In these industries, AI embeds directly into production. Competitive advantage increasingly depends on how effectively intelligence is integrated into operations. Firms that do so operate faster and at lower marginal cost.

Other sectors follow as infrastructure and regulation align. Industry structure shifts toward intelligence-dense production.

Capital concentrates

New infrastructure layers attract capital.

Compute-intensive firms receive disproportionate investment. Market valuations increasingly reflect expectations of sustained AI-driven growth. Capital markets price access to intelligence capacity as strategic advantage.

Productivity expansion increases total output. How that output is distributed — between infrastructure providers, application developers, labour and states — shapes income patterns and political response. Industrial transitions also carry cycles of overcapacity and correction. Reallocation is structural, but not frictionless.

This concentration reshapes economic power — and the politics that follow.

National Strategy evolves

Productivity underpins national strength.

As scalable intelligence expands productive capacity, access to advanced compute becomes strategically significant. Governments respond with semiconductor policy, research funding, data centre incentives and energy planning. Intelligence becomes an essential part of defence strategy. Export controls and supply chain measures reflect recognition that compute capacity influences economic positioning.

Intelligence capacity is becoming a core component of national infrastructure and power.

A Multi-Decade Adjustment

This transition unfolds over years and decades.

Paper 0 explained why intelligence became computable at scale. This paper has shown what follows when intelligence becomes infrastructure. It requires capital. It consumes energy. It expands productive capacity. It reshapes organisations and industries. It reallocates returns. It influences national strategy. These are measurable developments.

Infrastructure requires time. Energy systems require expansion. Productivity gains diffuse gradually. Labour markets adjust incrementally. Outcomes vary by region and policy approach. Capital cycles fluctuate. Investment levels, energy planning and enterprise adoption indicate sustained structural commitment.

The direction, however, is clear. As intelligence scales, the economy will reorganise around it.