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INVESTMENT MANAGEMENT

BIG PICTURE

Artificial Intelligence: Ten Investment Truths

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Three years ago, Artificial Intelligence (AI) was a topic of mere curiosity. Today it is the subject of capital allocation. The challenge for investors is not only understanding that AI is consequential, but building frameworks precise enough to act on.

This Big Picture covers ten investment truths about AI that every asset owner must understand: from the infrastructure being built at extraordinary speed, to the agents beginning to act autonomously in the world, to the two competing architectures that will shape the geopolitical order for decades. The opportunity spans every layer of the stack and every asset class. So does the risk. Neither rewards a narrow framework.

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These are ten investment truths for asset owners who need frameworks, not forecasts.

1. **4-WAY CONVERGENCE: ALGORITHMS, COMPUTE, TALENT & CAPITAL**
   Compounding simultaneously with no historical precedent.
2. **MOORE'S LAW NO MORE: PHYSICS BECOMES THE BOTTLENECK**
   Every tech cycle has a bottleneck. With AI, it keeps moving.
3. **THE TOKEN ECONOMY: WHEN COMPUTE BECOMES REVENUE**
   Data centers are factories. Tokens are the product.
4. **FROM REACTIVE TO AUTONOMOUS: THE AGENTIC TRANSITION**
   AI is not waiting to be asked. It is already at work.
5. **DATA, DOMAIN AND DISTRIBUTION: THE NEW SOFTWARE MOATS**
   The moat is no longer the code, it is the three Ds.
6. **YESTERDAY'S SCI-FI IS INCREASINGLY IN REACH**
   AI stops analyzing the economy and starts operating it.
7. **AI IS A FULL-STACK CAPITAL CYCLE**
   This is a cross-asset, cross-sector capital cycle.
8. **COMPETING COMPUTE: TWO ARCHITECTURES, ONE RACE**
   AI is a matter of national security.
9. **AI IS STRATEGIC INFRASTRUCTURE, BUT NOBODY IS IN CHARGE**
   Capabilities are advancing. Governance is not.
10. **FROM TELEGRAMS TO TOKENS: HISTORY AS A ROADMAP**
    Tokens will come before the applications

1

Four-Way Convergence: Algorithms, Compute, Talent and Capital

COMPOUNDING SIMULTANEOUSLY WITH NO HISTORICAL PRECEDENT.

AI is transitioning from breakthrough technology to foundational infrastructure at a pace few anticipated. Google's 2017 Transformer breakthrough was the inflection point. What followed was a self-reinforcing flywheel across four forces scaling simultaneously: algorithms advancing through successive architectural breakthroughs, compute (i.e., resources for training and deploying AI) expanding at extraordinary speed, talent concentrating in a handful of institutions and capital deploying at a scale and velocity with no precedent in technology history. Approximately $2.3 trillion has been committed in AI capex since the Transformer breakthrough, and the pace is accelerating, not plateauing.

The results are measurable. Consumption of tokens (basic units of texts that an AI model processes) grew more than 10x in 2025 alone. Models are becoming multi-modal across voice, image and video. The virtuous cycle remains intact: model improvements drive higher usage, higher usage drives higher investment and higher investment drives better models.

These four forces are converging toward Artificial General Intelligence, or AGI, meaning AI systems capable of performing any intellectual task a human can, across any domain, without task-specific retraining. Today's AI is extraordinary but narrow. It automates specific workflows within its training domain. AGI removes that constraint entirely, autonomously identifying, designing and executing solutions to problems it has never encountered. Beyond AGI lies ASI (Artificial Superintelligence) systems that surpass the best human performance across all domains. Anthropic's CEO has framed what this looks like in practice: "a country of geniuses in a data center by end of 2027."

AI capabilities are currently doubling every four months, implying systems 250 times more powerful by 2028 than today. History offers no reliable template for compounding at this rate.

2

Moore's Law No More: Physics Becomes The Bottleneck

EVERY TECHNOLOGY CYCLE HAS A BOTTLENECK. IN THIS ONE, IT KEEPS MOVING.

Moore's Law, the 60-year principle that every two years compute got cheaper and more powerful, no longer holds. This is not a temporary slowdown. The physics have run out. That makes the shift structural, meaning the industry has to find entirely new ways to deliver performance.

The industry's response is multi-dimensional. At the chip level, chiplet architectures (multiple semiconductors placed side by side or stacked) are delivering performance improvements beyond the limits of traditional designs. At the system level, co-designed, multi-chip architectures are producing step-function gains in AI compute density. At the data center level, silicon photonics is emerging as the solution to bandwidth constraints that copper interconnects cannot address at scale.

Components previously treated as commodity inputs are being repriced as strategic supply chain assets. Memory is currently undersupplied through end of 2026. AI and data center demand is expected to create 75–100 exabytes of incremental memory demand in 2027, doubling again in 2028. Hyperscaler buying behavior has changed structurally: Supply security now takes priority over price optimization and long-term supply agreements, which have historically been rare in memory markets, are being signed today.

The pattern is consistent. The bottleneck migrates up the supply chain: first chips, then power, then memory, then networking, then cooling. Each migration turns yesterday's commodity into tomorrow's scarce asset. The semiconductor story is no longer about who makes the best chip. It is about which layer of the supply chain becomes indispensable next. For investors, identifying that layer before consensus is the opportunity.

3

The Token Economy: When Compute Becomes Revenue

DATA CENTERS ARE FACTORIES. TOKENS ARE THE PRODUCT.

Three years ago, the world was asking what AI could do. Today, the more important question is what AI generates. The answer is tokens. Every query answered, every document drafted, every agent action executed generates tokens. They are measurable, priceable and scalable. Tokens are the output of a new kind of factory. Data

"The single most important technical metric in this new economy is tokens per watt, the measure of intelligence produced per unit of energy consumed."

centers have crossed a threshold: They are no longer cost centers supporting a business. They are production facilities manufacturing intelligence and their output is priced at dollars per million tokens, much like electricity is priced per kilowatt hour.

The economics are already established. Compute capacity and revenue have become directly proportional in a way that has no precedent in the history of enterprise technology. Companies with three times more compute are generating three times more revenue. The single most important technical metric in this new economy is tokens per watt, the measure of intelligence produced per unit of energy consumed.

However, the demand trajectory is not linear. AI has evolved through three distinct phases, each representing a dramatic step-change in token consumption. Generative AI (using models to generate text, images, videos, audio and other forms of data) established the baseline. Reasoning AI, which introduced self-reflection and error correction, required approximately 1,000 times more compute. Agentic AI, systems that act rather than merely answer, using tools, executing tasks and running continuously, requires approximately one million times more compute than the original conversational model. Each phase has expanded the market, not replaced it. More users, more agents per user, more complex workflows, more always-on systems mean the drivers of demand are multiplying together.

The $2 trillion software industry was built on licensing seats. The next chapter will be built on consuming tokens.

4

From Reactive to Autonomous: The Agentic Transition

AI IS NOT WAITING TO BE ASKED. IT IS ALREADY AT WORK.

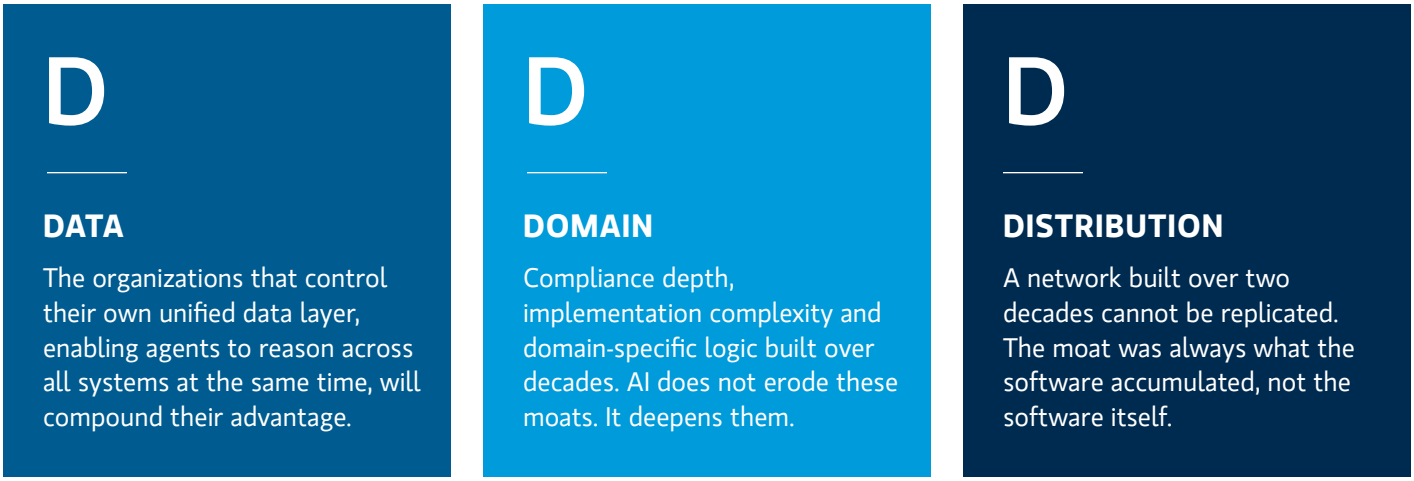
The first generation of AI was reactive. You typed in a question, AI answered. The interaction was transactional, the interface familiar with the human firmly in control. That model is giving way to something fundamentally different. AI is transitioning from a tool that only responds to a system that acts, autonomously executing tasks, managing workflows, operating continuously and transacting independently. The shift from retrieval to execution is not a simple product update. It is a revolutionary restructuring of how work gets done.

The early evidence can be seen in the numbers. Developer adoption has moved fastest. Some engineers are already managing four or more agents concurrently, delegating rather than coding, overseeing rather than executing. Agent traffic on major internet infrastructure networks went near-vertical in early 2026.

The organizational implications are as significant as the technical ones. Microsoft describes three distinct modes of AI interaction at work: simple chat, delegated tasks and full digital workers with their own identities, tools and workspaces. Although adoption is currently happening unevenly across firms and functions, over the next three years most individual contributors will involve managing groups of agents rather than executing tasks directly. Every employee will manage agents. The question organizations will face is not whether to adopt agentic AI, but how quickly they can redesign workflows around it rather than merely layer it on top of existing processes.

The most underappreciated dimension of the agentic transition is what happens when agents begin to transact, not just act. Agentic commerce, where AI agents actually execute purchases, settle payments and manage financial interactions autonomously, is already emerging as infrastructure. In fact, agent-to-agent transactions will naturally favor payment rails (payment platforms or networks) that require no human authorization, have no banking hours and settle in seconds. The architecture required is now being built across payment platforms, internet infrastructure and digital asset networks.

DISPLAY 1
Data, Domain and Distribution: The New Software Moats



Source: MSIM, as of 5/31/2026. Provided for informational purposes based on the research, analysis, and opinions of the EME Team; not a recommendation to purchase or sell specific securities, or to adopt any particular investment strategy.

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Data, Domain and Distribution: The New Software Moats

THE MOAT IS NO LONGER THE CODE, IT IS THE THREE D'S

While AI training is capital intensive and competitive, the next wave of value will come from AI usage: inference, orchestration, applications and workflows that offer more durable recurring revenue opportunities. New AI-native companies, leveraging massive compute with far fewer employees, are already demonstrating the structural cost and speed advantages over incumbents built for a different era.

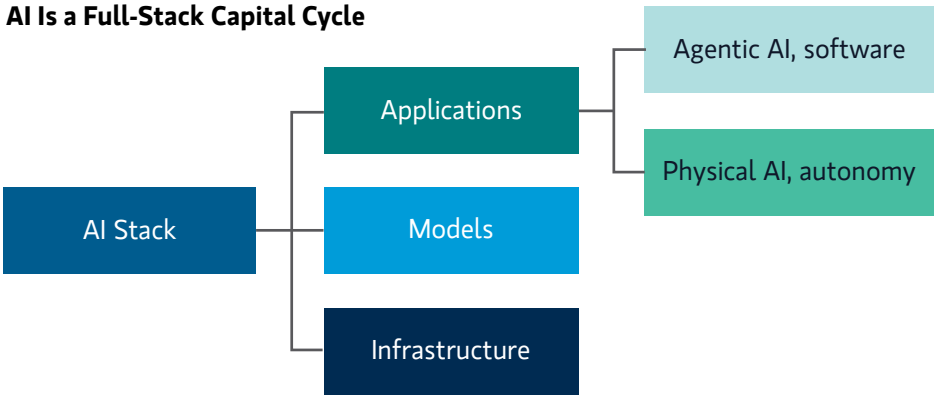
Durable moats are moving away from code, toward workflow depth, proprietary data, domain expertise, network effects, compliance and distribution. Building software today costs a fraction of what it did. Features that once took months and hundreds of millions to build can be replicated in days. But replicating a network built over two decades cannot. The moat was never only the software. It was always what the software accumulated over time. AI has not changed that logic. It has sharpened it.

In vertical SaaS (Software as a Service) especially, the winners are likely to be firms with the three Ds: Data, Domain and Distribution (Display 1). Data is the most contested. Most enterprise data sits fragmented across dozens of systems including CRM (customer relationship management), ERP (enterprise resource planning), email and documents, each siloed behind its own database and charging export fees, each charging export fees that make unified access expensive and slow. An AI agent that cannot see the full picture produces weaker, more fragmented recommendations. The organizations that control their own unified data layer, enabling agents to reason across all systems at the same time, will compound their advantage. The vendors who silo data behind export fees are not protecting a moat. They are likely accelerating their own displacement.

Domain and distribution are equally powerful but more durable. Systems embedded deeply in mission-critical workflows such as core banking, ERP, vertical SaaS running entire industries, carry moats built from years of implementation complexity, compliance requirements and domain-specific logic that AI deepens rather than erodes. Investors need to distinguish between companies enhanced by AI and those vulnerable to AI-native competition. The companies with the strongest advantage will have all three i.e., data, domain and distribution dominance.

DISPLAY 2

AI Is a Full-Stack Capital Cycle



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6

Yesterday's Sci-Fi Is Increasingly in Reach

AI STOPS ANALYZING THE ECONOMY AND STARTS OPERATING IT.

Intelligence is moving from software into machines that move, build, transport and operate. If digital AI automated knowledge works, embodied AI will automate the physical economy. Autonomous mobility, robotics, industrial automation, drones and intelligent infrastructure are no longer experimental. They are being deployed commercially at scale. A new transportation layer is emerging between ground and traditional airspace. Software-defined vehicle revenue has doubled from $500 million in 2021 to $1 billion in 2024, targeting $2 billion by 2027.[1] Government programs and defense contracts are early anchors of demand, significantly expanding the addressable opportunity.

Every autonomous system, regardless of end use, relies on the same stack: chips, compute, sensors, energy storage, electric propulsion and actuation. Value accrues disproportionately to whomever controls these choke points.

Humanoid robots today are no longer trained in the real world but in simulation environments that compress years of physical learning into days, the specific breakthrough that makes physical AI scalable rather than experimental. Physical AI could transform transportation and logistics, manufacturing, construction, agriculture, defense and healthcare. Core platforms, enabling infrastructure and the software layer, will underpin this ecosystem.

Autonomy is not a niche vertical. It is a horizontal layer spanning hardware, software, sensors and power systems. It marks the moment when AI stops analyzing the economy and starts operating it: on the ground, in the air and in space. It lowers the cost of labor, reshapes supply chains and concentrates value at the core inputs. We will not need to predict which robot wins. We will need to allocate capital to the building blocks that every autonomous system will require.

7

AI Is a Full-Stack Capital Cycle

THIS IS NOT A SECTOR STORY. IT IS A CROSS-ASSET, CROSS-SECTOR CAPITAL CYCLE

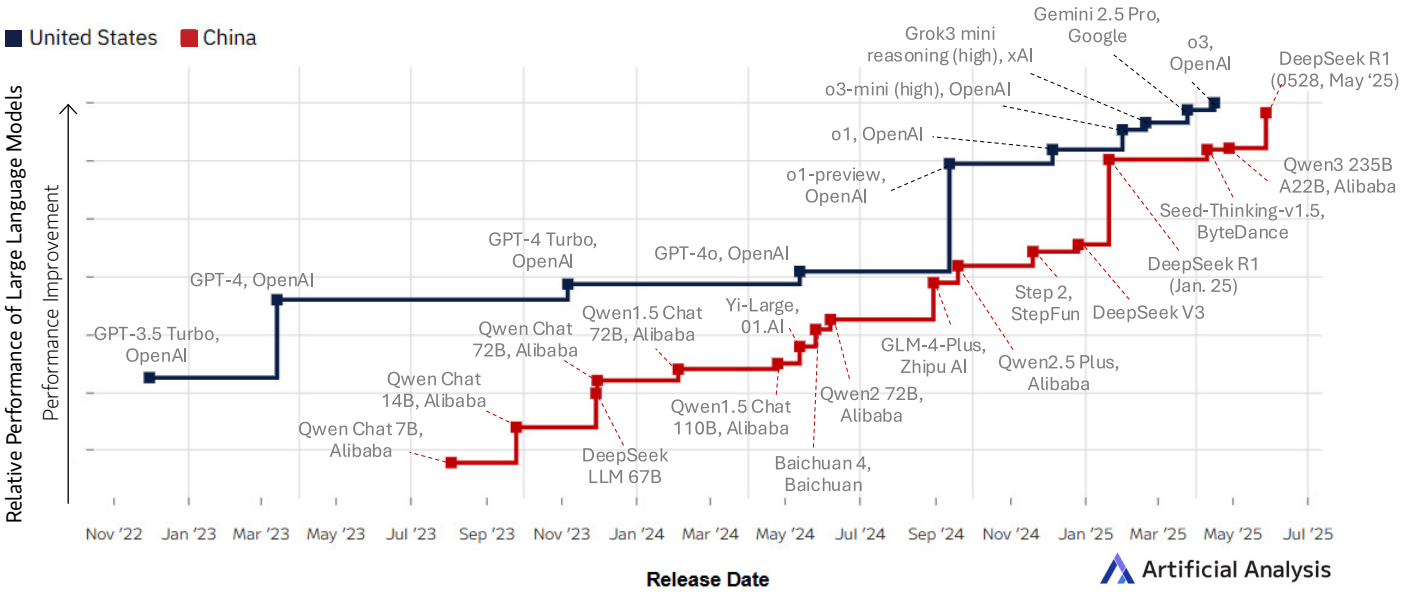
AI represents a full-stack capital cycle, and every layer is being priced in real time. It will create winners across semiconductors, foundry, memory, networking, power and cooling. At the model layer: training, inference, security and governance. At the application layer: software, agentic platforms, robotics, sensors, actuators and edge computing. The scarce asset shifts as bottlenecks move through the stack.

The stack has three distinct layers (Display 2). At the foundation sits the infrastructure layer that is capital intensive, supply constrained, and the layer on which every AI system ultimately depends. In the middle, the model layer encompasses training, inference and orchestration, where compute intensity is highest and competitive dynamics are most fluid. At the top, the application layer is splitting into two distinct categories: agentic AI, which acts autonomously within digital workflows, and autonomous AI, which operates in the physical world through robotics, sensors, edge computing and autonomous systems.For investors, the key questions are no longer simply about who has the best model. They are about who controls the

[1] KPMG - "Driving the Future of Mobility and Monetization" - February 2026. Forecasts and/or estimates are subject to change and may not actually come to pass.

DISPLAY 3

The U.S. and China: Frontier Language Model Intelligence Over Time



Source: Source: Stanford Institute for Human-Centered Artificial Intelligence: Artificial Analysis Intelligence Index Report. The Artificial Analysis Intelligence Index is a composite benchmark aggregating ten challenging evaluations to provide a holistic measure of AI capabilities across mathematics, science, coding, and reasoning.

infrastructure, who owns the data, who captures the emerging agent economy, who is embedded in mission-critical workflows, who commands the physical AI supply chain and who can translate AI capability into durable earnings power. Focus on where AI can unlock new demand, not just reduce costs. The biggest breakthroughs in AI are creating entirely new problems, then solving them before the market realizes they even exist.

For asset owners, this argues for a broader framework than simply buying hardware or software. AI is a cross-asset, cross-sector investment theme with implications for portfolio construction, manager selection and long-term capital allocation.

8

Competing Compute: Two Architectures, One Race

AI IS A MATTER OF NATIONAL SECURITY

Two distinct AI ecosystems are emerging. The U.S. model is a high-cost innovation engine, fueled by massive capital expenditure and access to cutting-edge chips. Its primary constraint is not semiconductors but power, the availability of electricity to run the infrastructure it is building. The Chinese model, constrained by export controls on advanced semiconductors, has evolved into a low-cost, efficiency-focused system, leveraging surplus power and open-source ecosystems, supported by deep partnerships across emerging market foundries and hardware sectors including servers, memory and networking, designed to create a parallel AI stack. That supply chain is reinforced by the manufacturing scale and technological expertise of North Asian companies whose capabilities span the full hardware spectrum.

The performance gap is closing faster than expected (Display 3). Despite spending only 18% of what American hyperscalers have invested, Chinese models are now benchmarking broadly in line with U.S. peers, with the lag on reported performance narrowing to approximately one month. The lower cost base has allowed Chinese models to reduce token costs faster while offering comparable performance, driving market share gains as measured by cumulative downloads. China's hyper-digitized

economy is enabling faster adoption and application deployment. The competitive signal of 2026 is the shift by one major U.S. hyperscaler away from an open-source model strategy and toward a proprietary model, an implicit acknowledgment that open source cannot win the enterprise. If this triggers an industry-wide move toward closed models, value concentrates at frontier labs. If open source proves resilient, inference margin compression accelerates across the industry.

Harnessing AI is becoming a matter of national security. Military and commercial applications from advanced and autonomous weaponry to real-time battlefield awareness is gaining importance. Governments and defense establishments were passive observers of the first phase of AI development, and are now becoming active participants, and active customers, in the second. The race is no longer purely commercial. It is strategic. And strategic races, historically, run longer and attract more capital than commercial ones.

9

AI Is Strategic Infrastructure, but Nobody Is in Charge

CAPABILITIES ARE ADVANCING. GOVERNANCE IS NOT.

The policy vacuum around frontier AI is widening. Capabilities are advancing faster than public policy can respond, leaving private companies, not governments, to make important decisions with geopolitical consequences. Private companies are effectively setting access policy, deciding which countries and firms can deploy models capable of identifying decades-old vulnerabilities in critical financial and physical infrastructure. This is private regulation of public infrastructure, without a government mandate. No elected body authorized this and no international framework governs it.

The U.S. is especially exposed. Its economy is highly digitally-connected while much of its critical infrastructure is privately owned. Many sectors still lack minimum cybersecurity requirements. Recent vulnerabilities across telecom, water and energy have already shown how costly this weakness can be. The adoption of AI is expanding the attack surface faster than defensive capabilities are being deployed. Half the enterprise market remains on legacy cybersecurity protection despite AI-driven threats operating at machine speed with no second chances. Security, safety and access controls have not caught up to agent capabilities.

The concerns extend well beyond cybersecurity. Lab leaders themselves are warning that the pace of development may need to slow. Yet policymakers are not responding with matching urgency. Advanced systems may become harder to control as they gain access to tools, external APIs (application programming interfaces) and workflows.

China's rapid progress to narrow the AI gap should be treated as a base-case assumption, not a distant risk. Washington cannot hold off regulation as though it has a commanding lead. The most important regulatory challenge is creating credible guardrails fast enough to match the technology, while still competing aggressively. The U.S. needs international, national and social policies capable of matching the speed of technology.

10

From Telegrams to Tokens: History as a Roadmap

THE CABLES CAME BEFORE THE INTERNET. THE TOKENS WILL COME BEFORE THE APPLICATIONS

The current AI infrastructure buildout feels unprecedented. The capital commitments are extraordinary, the pace of change disorienting and the gap between investment and monetization uncomfortable for those who remember the last time the world collectively built this fast. But the pattern is not new. It has been repeated across every major communications infrastructure cycle for 170 years and each time the infrastructure that seemed ahead of its moment turned out to be the prerequisite for the adoption wave that followed.

The earliest example dates to the birth of subsea telegraphy in the mid-19th century. Sending a 30-word telegram from Australia to the United Kingdom once cost the equivalent of three weeks of average wages. Technological improvement, competition and consolidation drove prices from $1.09 to $0.30 per message between 1866 and 1900. Volume grew 11-fold, from 5.8 million to 63.2 million messages. Lower costs were more than offset by higher usage. Value tripled even as prices fell. By 1930, volume had grown a further three-fold to nearly 212

million messages. The shift was already visible: infrastructure buildout leads to price compression, price compression drives adoption, and adoption generates demand that the original builders never imagined.

The internet era repeated it with greater velocity. The 1996 Telecommunications Act opened the door to a fiber buildout that saw telecom operators multiply from 30 to 711 in four years. Annual fiber deployment quadrupled and drove long-distance call costs from $0.75 to $0.55 per minute, with some routes falling as low as $0.10. What looked like overbuilding turned out to be the foundation of the consumer internet era. The applications that ultimately justified the infrastructure, including search, social media, streaming, ride-hailing, e-commerce, did not exist when the cables were being laid.

This pattern repeats with consistency: infrastructure buildout, price compression, demand acceleration and a new application layer that was unimaginable at the infrastructure investment stage. According to Sam Altman AI token costs fell 10x in 2025 alone. The applications that will consume the infrastructure being built today are still ahead of us. The companies that generate the greatest returns may not yet have been founded. What we can say with confidence is that this pattern has repeated reliably and AI is following it with one critical difference: velocity. The telegraph took decades to commoditize. The fiber buildout took a decade. AI's price compression took one year. The adoption inflection may not take ten years. It may take two.

"The applications that will consume the infrastructure being built today are still ahead of us. The companies that generate the greatest returns may not yet have been founded."

What Could Go Wrong

The first risk is that the convergence could stall. Algorithms may be hitting diminishing returns. There is a credible body of research suggesting that scaling laws are flattening, meaning more compute no longer produces proportionally better models. The next breakthrough may not arrive on the current architectural path. For example, if AGI takes longer than expected, today's capital deployment could create stranded assets at extraordinary scale.

The second risk is the gap between capability and monetization. Every metric of AI performance is accelerating. However, economy-wide productivity gains are not yet visible in the data. Most enterprises remain in an experimental phase, seeking clearer return on investment before committing to full workflow transformation. If that gap does not close and AI remains a cost center rather than a revenue generator for the broader economy, the capital cycle turns.

The third risk is reliability. Agents that act rather than answer create a new category of concern. In conversational AI, a hallucination produces a wrong sentence. In agentic systems executing tasks across enterprise workflows, a model error could cause a wrong action, with real consequences. One high-profile failure at a systemically important institution could trigger regulatory intervention that slows enterprise adoption for years. The liability framework for agentic AI is entirely unresolved. It is unclear who will be responsible when an agent causes harm.

The final risk is concentration masquerading as diversification. The AI investment ecosystem appears broad: semiconductors, cloud, models, applications, physical systems. But the correlations are deep. Hyperscalers are investing in AI labs whose revenue flows back to their own cloud platforms. Advanced semiconductor manufacturing remains concentrated in a single geography. A geopolitical shock, a major capital expenditure pullback or a regulatory intervention does not affect one layer. It ripples through all of them simultaneously. The risks are real. The opportunity is larger.

Conclusion

For asset owners, these ten investment truths argue for a broader framework than simply buying hardware or buying software. AI is a cross-asset, cross-sector investment theme with implications for portfolio construction, manager selection, long-term capital allocation and systemic risk management.

The investors best positioned for the decade ahead will treat AI not as a sector consideration, but as a full-stack capital cycle. That means building frameworks that span the infrastructure layer, models software platforms and the physical world where embodied intelligence is beginning to automate the real economy. The opportunity is not in any single layer. It is in understanding how all the layers connect.

A FINAL NOTE ON HUMILITY

Nobody has experience deploying AI at this scale. The future is being built in real time. The frameworks in this paper represent our best current thinking and will need to be revised as facts change. A hallmark of good AI investing is not certainty about outcomes, but the discipline to use frameworks rigorous enough to update as new evidence arrives.

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