

# The Artificial Intelligence Journey For Investors

The Promise & Peril From Disruptive  
Innovation To Strategic Considerations

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# The Canadian Impact — NeurIPS, Vancouver 2024

## The Oscars Of The AI World

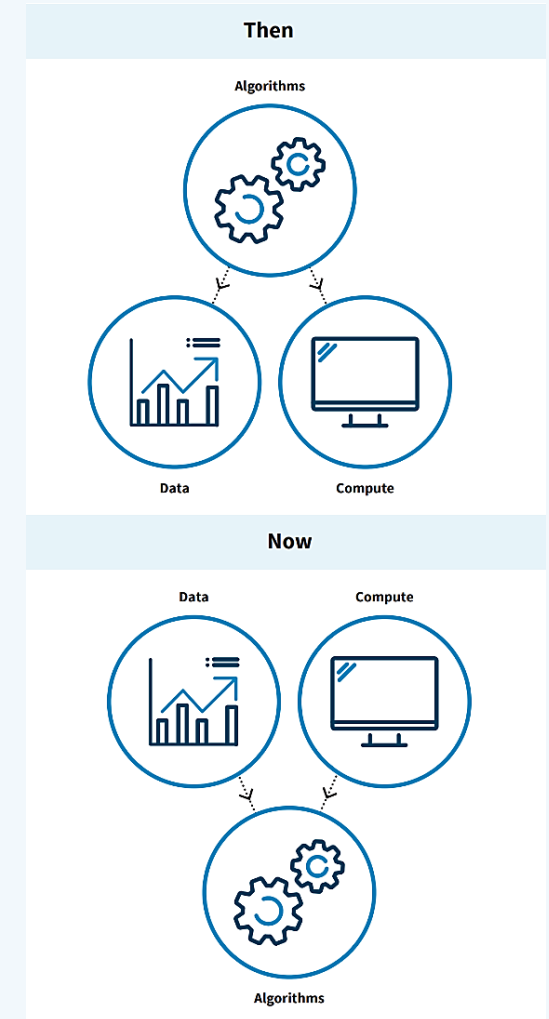


# The Promise Of AI

Investing Billions, Impacting Trillions

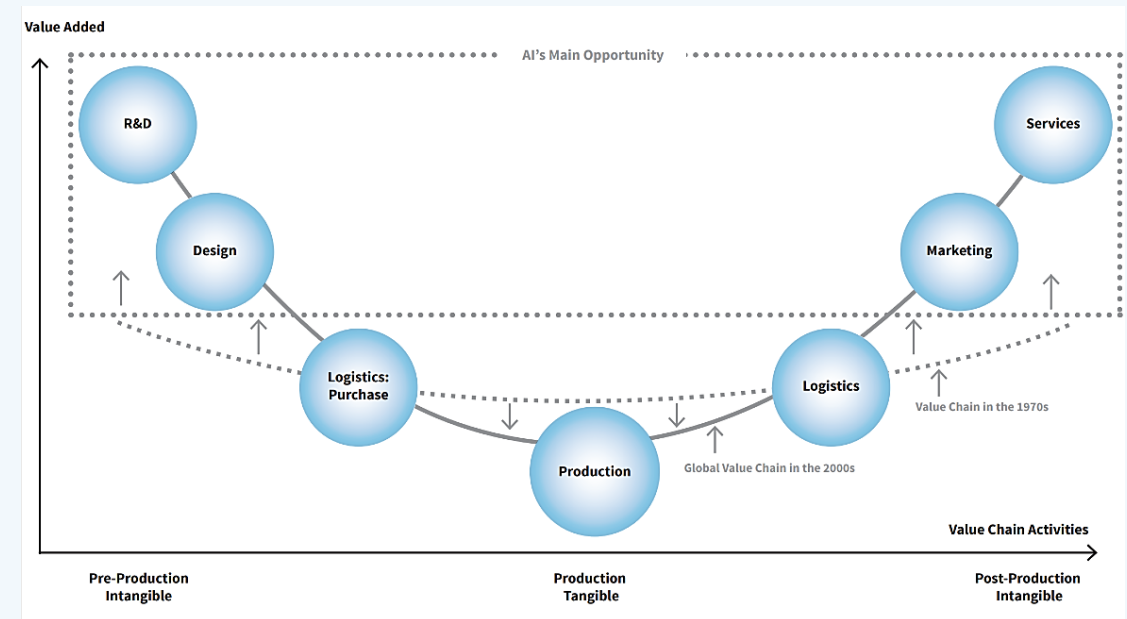
# Today's AI – A New Algorithmic Era

- ▶ **Early Misconceptions:** Originally, transformative technologies (e.g., integrated circuits, the internet) were misunderstood, underscoring the need to grasp AI's true nature
- ▶ **Flipping the Equation:** Modern AI reverses traditional roles by unlocking data and compute, thereby reshaping how algorithms function
- ▶ **Deterministic to Probabilistic Shift:** Transitioning from precise, rule-based software to AI that learns adaptively through probabilistic outcomes
- ▶ **Scientific Paradigm Shifts:** This evolution mirrors broader scientific transitions—from Newtonian determinism to the probabilistic frameworks of quantum mechanics and complexity theory
- ▶ **Dual Digital Role:** AI now acts as both an intelligent decision maker and a tool for digital experimentation, impacting labor, R&D, and software markets



# Labor In The AI Era

- ▶ **Routine Task Automation:** AI leverages pattern recognition to take over repetitive tasks, reshaping the labor landscape
- ▶ **Human Edge in Complexity:** While AI excels at inductive reasoning, human deductive thinking remains essential for novel and complex challenges
- ▶ **Numerical Impact:** In the US, labor spending is about \$10 trillion, with \$7–\$8 Trillion tied to high-value tasks that AI could significantly transform
- ▶ **Efficiency Gains Even in Regulated Sectors:** In industries like healthcare, AI can reduce processes from 15 weeks with 50 experts to under 10 minutes with just 3 experts



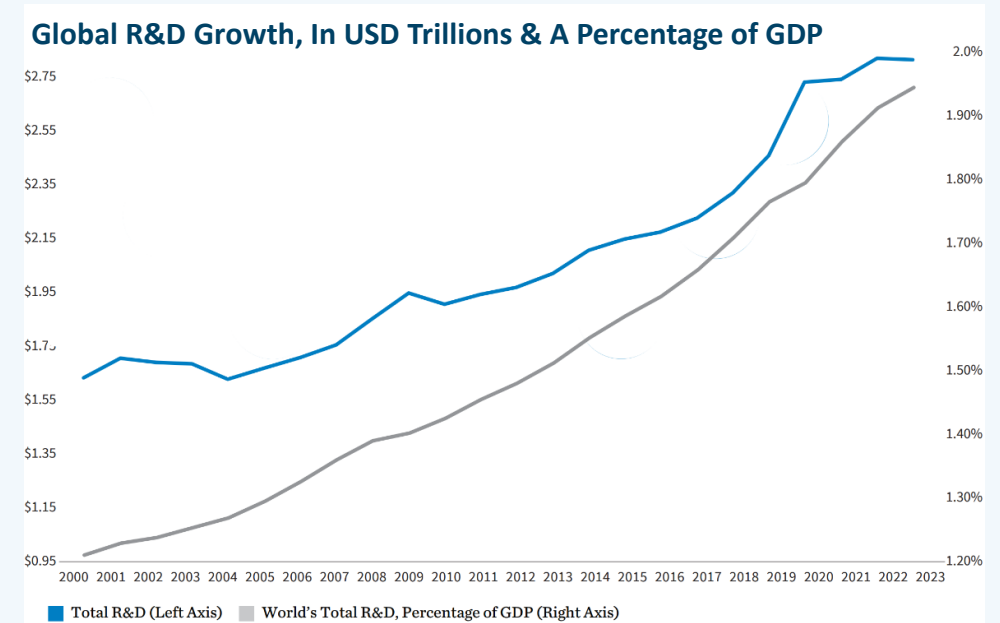
For illustrative purposes only.

Source: Reis, C. F. de B., & Souza, A. B. de. (2022). Drawing Value Curves: Lessons From Financial Statements of The World's Biggest Manufacturing Corporations. *Revue D'économie Industrielle*, (179), 39-68.



# R&D Transformed By AI

- ▶ **Accelerated Experimentation:** AI's probabilistic approach enables rapid, cost-effective experimentation across fields such as semiconductor design, drug discovery, and software development
- ▶ **Enhanced Discovery:** By integrating diverse data types (text, images, video, code, etc.), AI drives novel insights and supports breakthrough innovations
- ▶ **Methodology Transformation:** AI is reshaping traditional R&D processes by reducing reliance on exhaustive trial-and-error and enabling scalable, iterative testing
- ▶ **Numerical Impact:** Global R&D spending stands at \$2.75 trillion and is growing as a percentage of GDP, with AI poised to capture an increasingly larger share of this investment



Source: Bonaglia, D., Rivera León, L., and Wunsch-Vincent, S. (2024, December 18). End of Year Edition-Against All Odds, Global R&D Has Grown Close to USD 3 Trillion in 2023. World Intellectual Property Organization, WIPO estimates based on GII Database and data from Eurostat, OECD, RICYT, and UNESCO UIS.

# The Software Revolution

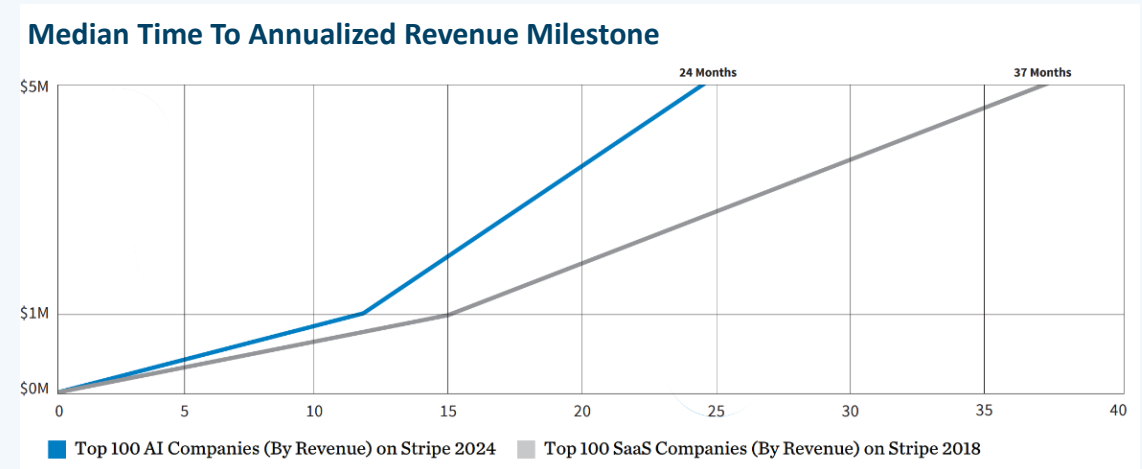
## ► From Deterministic to Adaptive:

Transitioning from rule-based software to AI-driven solutions that learn and evolve

## ► Industry Transformation: AI is redefining operations at companies like Meta and Tesla by optimizing content delivery and autonomous systems

## ► Efficiency Gains: AI enables dramatic reductions in development complexity (e.g., 100x reduction in code and human interventions), accelerating performance and innovation

## ► Numerical Impact: Traditional software spending is around \$700B today—projected to reach \$1T by decade's end—while AI's influence could drive value into the trillions in a \$100T global economy



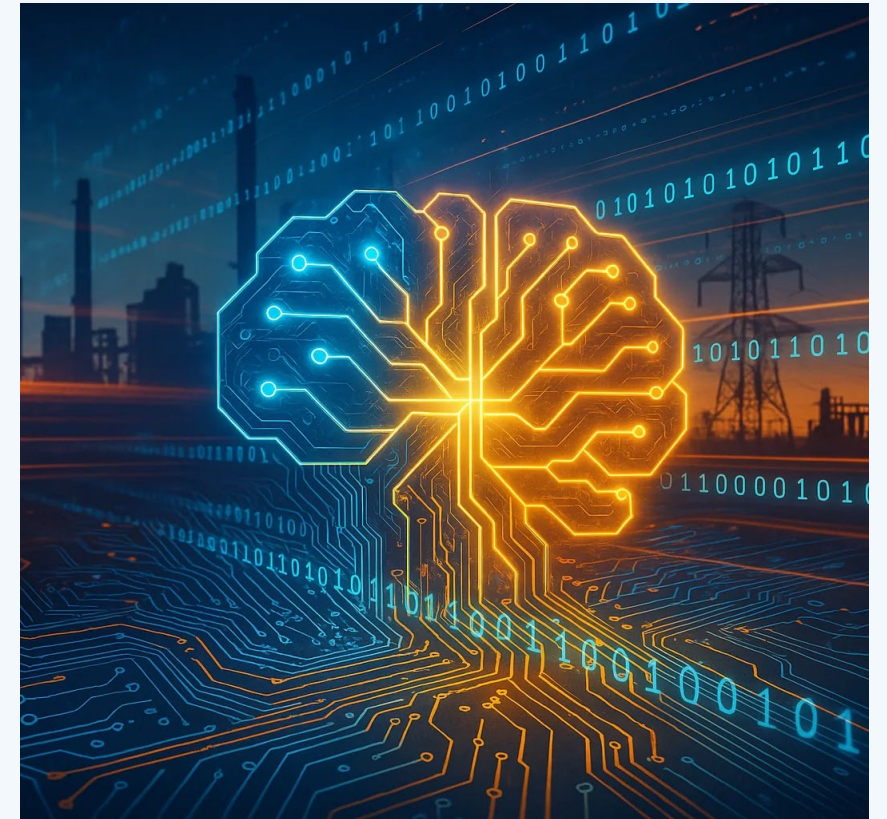
# The Peril Of AI

The Challenges For Investors



# AI As A General-Purpose Technology

- ▶ **Translating Data Into Value:** AI converts diverse data into numerical representations, enabling the computation of similarities and driving transformative applications
- ▶ **Invisible Infrastructure:** Like electricity, AI isn't a tangible product—the technology's true value emerges only when integrated with complementary products, infrastructure, and organizational changes
- ▶ **Long-Term ROI & Timing:** Historically, general purpose technologies take decades to mature, with early investments laying the groundwork for massive future economic impact
- ▶ **Strategic Industry Transformation:** Although immediate financial returns may be elusive, AI's pervasive integration is reshaping industries by enhancing efficiency, innovation, and competitive positioning



## Fermat, Pascal & Darwin — AI May Not Lead To Profitability

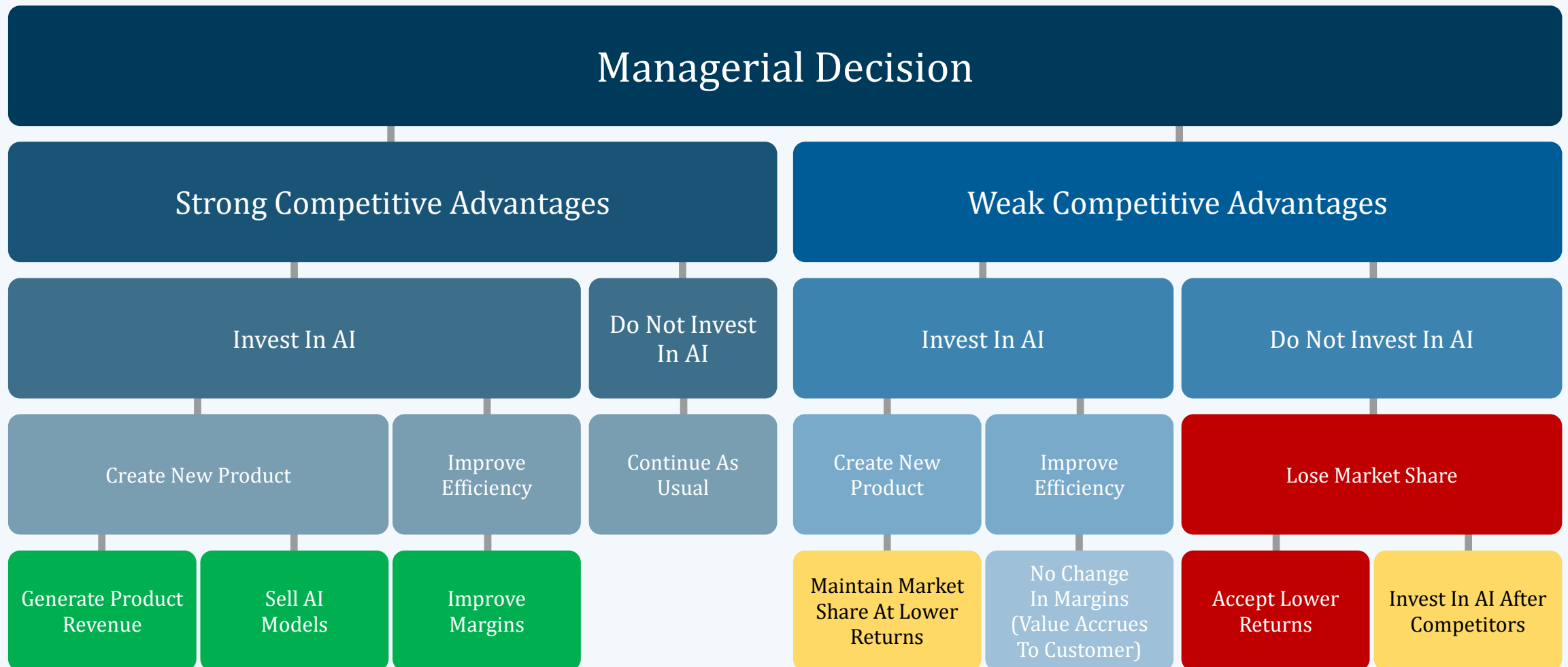
*The Fermat/Pascal system is dramatically consonant with the way that the world works. And it's a fundamental truth. So, you simply have to have the technique... One of the advantages of a fellow like Buffett, whom I've worked with all these years, is that he automatically thinks in terms of decision trees and the elementary math of permutations and combinations.*

— Charlie Munger (1994)

*It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.*

— Charles Darwin, *On The Origin Of Species* (1859)

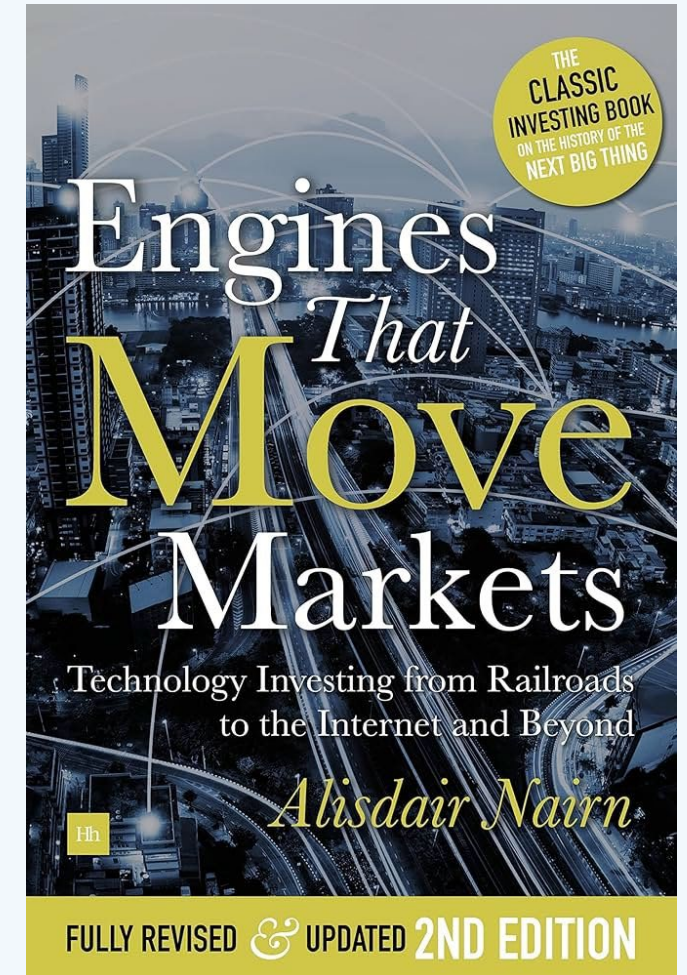
# Fermat, Pascal & Darwin – AI May Not Lead To Profitability



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# AI Asymmetry Of Winners Vs. Losers

- ▶ **Historical Asymmetry:** It's often easier to identify incumbents being outcompeted (like canals or horses) than to pinpoint which emerging company will win in a disrupted market
- ▶ **Legacy Disadvantage:** Companies built on older technological foundations face inherent challenges as AI-driven innovations push the technological frontier higher
- ▶ **Uncertainty in Winners:** While industry-wide disruption is inevitable, determining which specific companies will capture lasting value remains highly uncertain
- ▶ **Private Capital Dynamics:** Many AI-native firms stay private longer, limiting access for public investors and deepening the asymmetry between potential winners and losers



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# Q&A

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