Manulife Investment Management

Investment Note

29 Jul 2026

Gun Woo
Senior Director, Portfolio Manager

June Chua
Head of Asia Equities

When electricity first arrived, the world built the necessary infrastructure – power plants, transmission lines – before the real transformation could take hold.

A similar process is happening with artificial intelligence (AI). Today's massive investment in chips, data centres, and power grids is laying the foundation for a potential expansion in AI application that could take years to develop. In our view, the discussion is increasingly shifting from whether AI adoption will continue to how the enabling infrastructure is being built. Asia appears to be playing an important role in that development.

AI innovation: Asia helps build many of the world’s technologies behind it

Key points:

- AI has evolved from machine learning, to a talking chatbot, to an autonomous agent that works.
- Many Asia-based AI suppliers operate behind global brands and may receive less attention than the end-product companies they support.
- Asia's opportunity spans both breadth and depth, with applications that could support a broad range of end markets globally.
- Asia's manufacturing experience and capacity may position it well to participate in the next phase of innovation.

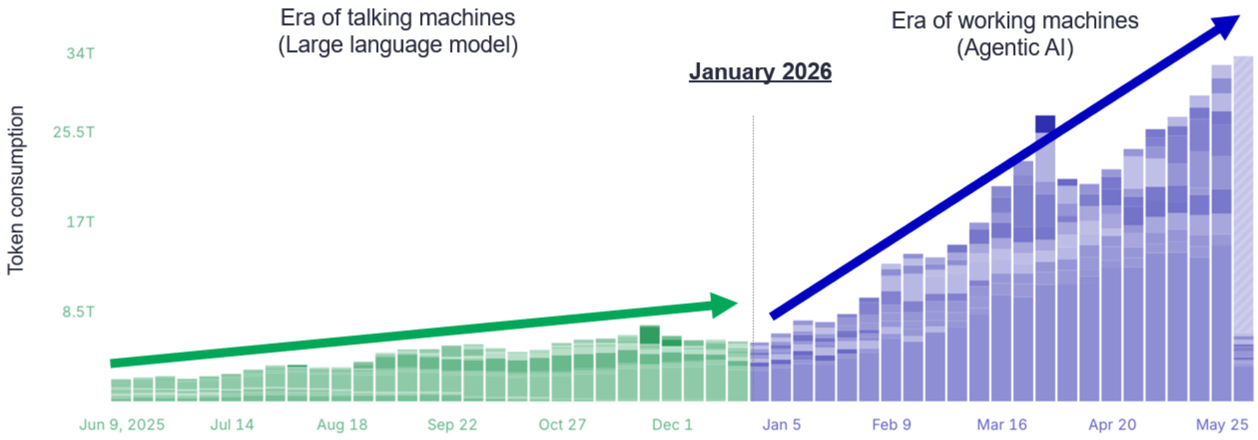
The evolution of AI

Intelligence is defined as the ability to sense, analyse, and react to information. Within the context of AI, machine learning does exactly this, using graphics processing units (GPUs) to process information and memory to store and transfer it. Then came generative AI, widely associated with the launch of ChatGPT in 2022, when machines started providing intelligent responses to questions. By 2026, agentic AI had arrived: machines could now carry out tasks, such as sending emails, making reservations, and writing software code.

Each stage of this evolution has demanded a bigger "computer", requiring more GPUs and more memory. And as AI advanced from talking to working, demand accelerated with it. The advent of agentic AI in 2026 marked a notable increase in token consumption, a measure of how much AI is being used.

AI used to answer, now it acts

AI demand growth trajectory has been accelerated



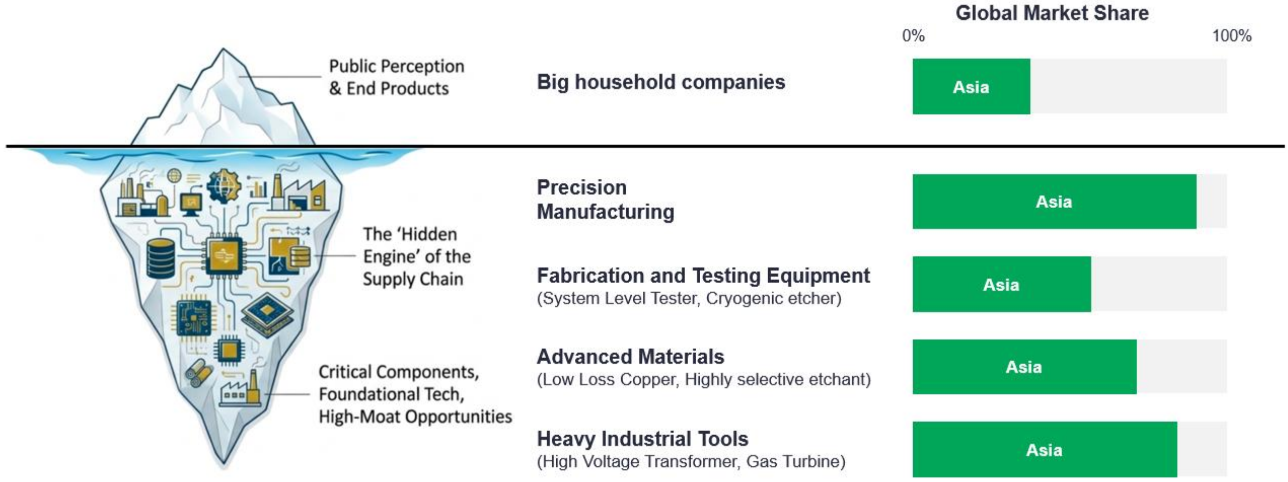
Source: OpenRouter AI. Manulife Investment Management, July 2026.

Hidden engines Aof the supply chain are in Asia

Meeting the rapid rise in demand for AI requires more than just clever algorithms – it requires physically building the infrastructure to support it at a significant scale.

When we talk about AI companies, big household names are often the first to come to mind. However, beyond the surface lies a broad network of less visible manufacturers, equipment makers, and materials suppliers. From precision manufacturing to fabrication and testing equipment, advanced materials, and heavy industrial tools, only a handful of companies in the world possess the capability to deliver. Most of these companies are based in Asia.

Entire value chain opportunity



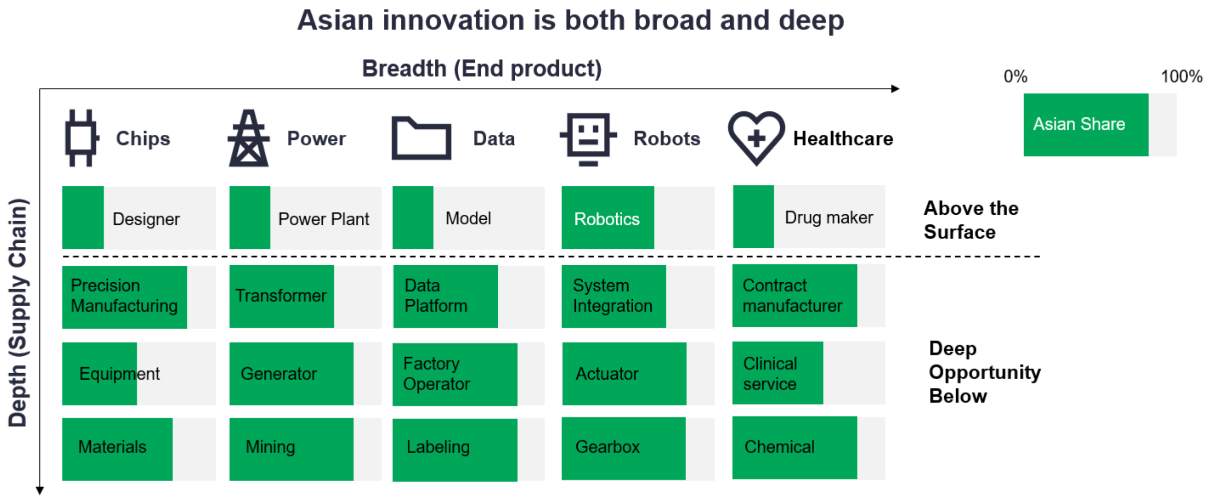
Source: Manulife Investment Management, July 2026.

Asia's opportunity appears both broad and deep

Asia's footprint spans a wide range of AI verticals, including chips, power, data, robotics, and healthcare.

Across each of these, the same engine pattern repeats itself. For instance, in robotics, a chain of system integrators, actuator makers, and gearbox manufacturers operate mostly unnoticed beneath it, we believe some of them appear to be in competitive positions from fundamentals and valuation perspectives.

Asia's market share looks to increase further down the AI value chain. These areas may present a differentiated opportunity set.



Source: Manulife Investment Management, July 2026.

Asia may be well positioned in the next innovation cycle

Innovation has long depended on proximity to manufacturing, and Asia has long been considered a major manufacturing hub, supported by established production ecosystems and capacity in several industries.

- Asia accounted for 45% of global research and development (R&D) spend in 2024, up from 23% in 2000, and 71% of global patent grants were awarded in Asia in 2024.
- 92% of leading-edge chip capacity is in Taiwan region
- About 70% of global memory chips are made in Korea
- China accounts for around 70% of global electric vehicle (EV) and battery production, and 80% of global solar module production.

Source: WIPO Global Innovation Index 2025; UNESCO; TrendForce; SNE Research; Manulife Investment Management estimates, as of July 2026.

Solid manufacturing know-how and skill enable better quality products at competitive prices, which in turn may drive more consumer demand. Greater demand may bring greater volume through the region's factories, feeding a virtuous cycle that may compound over time.

With Asia's manufacturing scale and supply chain strength, we believe the region appears well positioned to participate in the next phase of industrial and technology transformation.

From the chips that power AI to the applications that may define its future, Asia is helping build many of the technologies that the world runs on.

Important Information

Investing involves risks, including the potential loss of principal. Financial markets are volatile and can fluctuate significantly in response to company, industry, political, regulatory, market, or economic developments. These risks are magnified for investments made in emerging markets. Currency risk is the risk that fluctuations in exchange rates may adversely affect the value of a portfolio's investments.

The information provided does not take into account the suitability, investment objectives, financial situation, or particular needs of any specific person. You should consider the suitability of any type of investment for your circumstances and, if necessary, seek professional advice.

This material is intended for the exclusive use of recipients in jurisdictions who are allowed to receive the material under their applicable law. The opinions expressed are those of the author(s) and are subject to change without notice. Our investment teams may hold different views and make different investment decisions. These opinions may not necessarily reflect the views of Manulife Investment Management or its affiliates. The information and/or analysis contained in this material has been compiled or arrived at from sources believed to be reliable, but Manulife Investment Management does not make any representation as to their accuracy, correctness, usefulness, or completeness and does not accept liability for any loss arising from the use of the information and/or analysis contained. The information in this material may contain projections or other forward-looking statements regarding future events, targets, management discipline, or other expectations, and is only current as of the date indicated. The information in this document, including statements concerning financial market trends, are based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons. Manulife Investment Management disclaims any responsibility to update such information.

Neither Manulife Investment Management or its affiliates, nor any of their directors, officers or employees shall assume any liability or responsibility for any direct or indirect loss or damage or any other consequence of any person acting or not acting in reliance on the information contained here. All overviews and commentary are intended to be general in nature and for current interest. While helpful, these overviews are no substitute for professional tax, investment or legal advice. Clients should seek professional advice for their particular situation. Neither Manulife, Manulife Investment Management, nor any of their affiliates or representatives is providing tax, investment or legal advice. This material was prepared solely for informational purposes, does not constitute a recommendation, professional advice, an offer or an invitation by or on behalf of Manulife Investment Management to any person to buy or sell any security or adopt any investment strategy, and is no indication of trading intent in any fund or account managed by Manulife Investment Management. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment. Diversification or asset allocation does not guarantee a profit or protect against the risk of loss in any market. Unless otherwise specified, all data is sourced from Manulife Investment Management. Past performance does not guarantee future results.

About Manulife Wealth & Asset Management

As part of Manulife Financial Corporation, Manulife Wealth & Asset Management's mission is to make decisions easier and lives better by helping people invest confidently to pursue a more secure financial future. Our strength comes from the diversity of our global asset management expertise and distribution capabilities. Our global investment teams span equities, fixed income, alternative credit, private markets, and multi-asset solutions. We provide investment, financial advice, and retirement plan services to millions of individuals, institutions, and retirement plan members worldwide. At the heart of our approach are three cultural pillars: Partner for Progress, Trust through Transparency, and Intellectual Curiosity. These values shape how we build long- term relationships, develop differentiated investment strategies, and empower advisors and clients to seek meaningful financial outcomes. Whether through cutting-edge technology, AI innovation, personalized advice, or sustainable stewardship, Manulife Wealth & Asset Management is a trusted partner helping clients navigate complexity and invest with confidence. Not all offerings are available in all jurisdictions. For additional information, please visit manulifeim.com.

This material has not been reviewed by, is not registered with any securities or other regulatory authority, and may, where appropriate, be distributed by the following Manulife entities in their respective jurisdictions. Additional information about Manulife Investment Management may be found at manulifeim.com/institutional

Australia: Manulife Investment Management Timberland and Agriculture (Australasia) Pty Ltd, Manulife Investment Management (Hong Kong) Limited. Canada: Manulife Investment Management Limited, Manulife Investment Management Distributors Inc., Manulife Investment Management (North America) Limited, Manulife Investment Management Private Markets

(Canada) Corp. Chinese Mainland: Manulife Overseas Investment Fund Management (Shanghai) Limited Company. European Economic Area: Manulife Investment Management (Ireland) Ltd. which is authorised and regulated by the Central Bank of Ireland Hong Kong: Manulife Investment Management (Hong Kong) Limited. Indonesia: PT Manulife Aset Manajemen Indonesia. Japan: Manulife Investment Management (Japan) Limited. Malaysia: Manulife Investment Management (M) Berhad 200801033087 (834424-U) Philippines: Manulife Investment Management and Trust Corporation. Singapore: Manulife Investment Management (Singapore) Pte. Ltd. (Company Registration No. 200709952G) South Korea: Manulife Investment Management (Hong Kong) Limited. Switzerland: Manulife IM (Switzerland) LLC. Taiwan: Manulife Investment Management (Taiwan) Co. Ltd. United Kingdom: Manulife Investment Management (Europe) Ltd. which is authorised and regulated by the Financial Conduct Authority United States: John Hancock Investment Management LLC, Manulife Investment Management (US) LLC, Manulife Investment Management Private Markets (US) LLC and Manulife Investment Management Timberland and Agriculture Inc. Vietnam: Manulife Investment Fund Management (Vietnam) Company Limited.

5772166 07/26