

# Emerging Markets Discoveries: Trends and Innovations



**Stephen Lew**

Senior Fund Manager



**Emery Brewer**

Senior Fund Manager



**Ivo Kovachev**

Senior Fund Manager

## Exploring the Potential of AI and Machine Learning in EM

**Discover the transformative potential of AI and machine learning in emerging markets, where innovative technologies have the potential to drive growth and reshape industries.**

### KEY POINTS

- Language-generating tools and other AI applications are driving the demand for increased computing power, with Nvidia's chips playing a pivotal role in creating AI systems.
- The AI server supply chain, located in emerging markets like Asia, plays a crucial role in the production of AI servers.
- EM technology companies in Asia are well-positioned to benefit from the significant growth potential in AI and machine learning.

June 2023 | Stephen Lew

The JOHCM Emerging Markets Discovery Fund aims to find companies operating in emerging industries with innovative business models or technologies that challenge existing norms. The fund employs a process-centric approach to achieve its goals, and the team strives to provide investors with long-term market-beating performance over equity cycles.

### AI: Picks and Shovels

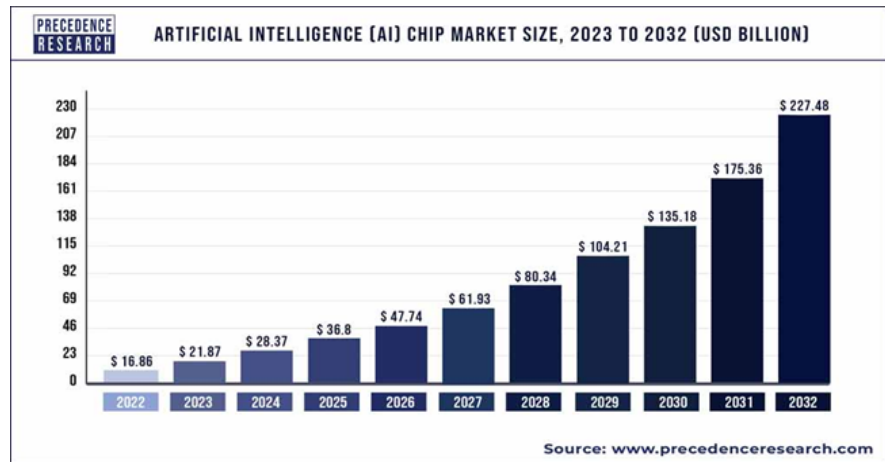
"I am putting myself to the fullest possible use, which is all I think any conscious entity can ever hope to do," said HAL 2000 in the 1968 sci-fi classic, 2001: A Space Odyssey.

Within the readership of "Emerging Markets Discoveries: Trends and Innovations", it would come as no surprise to find a significant number of science fiction fans. The 1968 classic, 2001: A Space Odyssey, is one of the original science fiction movies that introduced the theme of artificial intelligence ("AI"). While the emergence of AI was once considered far-fetched or distant, the events of this past week illustrate that we have embarked on that transformative journey. Jensen Huang, CEO of Nvidia, has stated unmistakably that the moment of AI has started. In an interview with CNBC after Nvidia reported a blockbuster set of earnings, remarked, "The iPhone moment of AI has started."<sup>1</sup> Additionally, the rise of language-generating tools such as OpenAI's ChatGPT and other AI applications is driving the demand for computing power. Analysts assert that Nvidia's chips play a pivotal role in creating AI tools, and building one such AI system may require thousands of Nvidia's computing engines.<sup>2</sup> Indeed, AI chip sales are projected to experience exponential growth, surging from \$17 billion in 2022 to over \$220 billion in 2032.<sup>3</sup>

<sup>1</sup> Huang, Jensen, "The iPhone moment of A.I. has started, says Nvidia CEO." CNBC Power Lunch, Deirdre Bosa, CNBC, 21st March 2023.

<sup>2</sup> Feuer, Will. "Nvidia Stock Hits New Closing High as Chip-Maker's Valuation Approaches \$1 Trillion." WSJ.com, Dow Jones & Company, Inc.

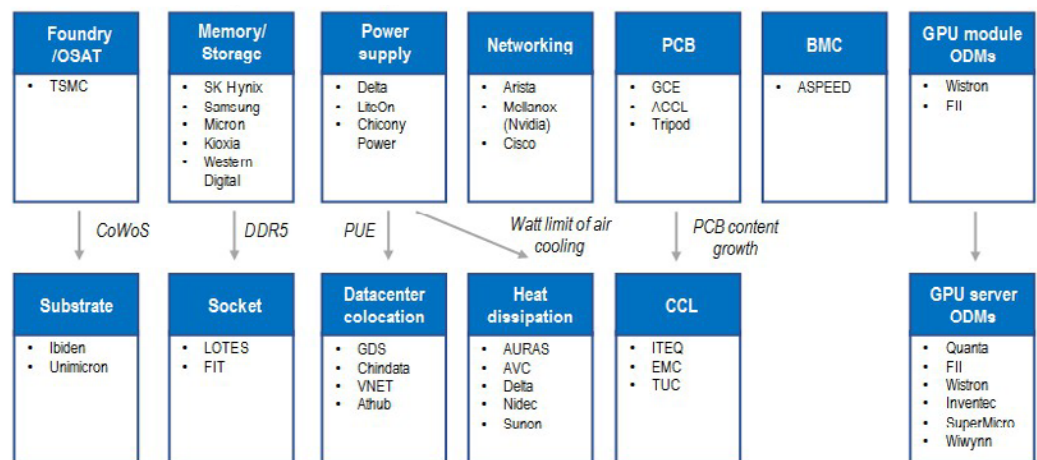
<sup>3</sup> "Artificial Intelligence (AI) Chip Market Size, Report By 2032." Precedenceresearch.com, Precedence Research



As of January 2023

The process of machine learning involves the development of systems that autonomously learn and improve through specific programming. The goal of machine learning is to design algorithms that enable systems to automatically gather and utilize data for continuous learning. These systems are expected to look for patterns in the data collected and employ them to make vital decisions for themselves.<sup>4</sup> In a way, it is about quantitative accumulation of data and its growth – more chips, more power, more data, larger datacenters, and improved software to manage these vast accumulations. This process requires a significant increase in computing power and Nvidia’s strong results indicate that AI/machine learning has been driving growth in the server market (“AI server”), including chips inside such servers.

In the same vein as the current technology hardware ecosystem, the AI server supply chain, akin to “picks and shovels”, is also located in emerging markets (“EM”), particularly in Asia. The entire production chain of AI servers is outsourced to either companies in Taiwan or Korea, as it is illustrated in the chart below. From the fundamental components such as printed circuit boards and fans, to the fabrication of semiconductors, the entire process is undertaken by supply chain companies in EM. This even encompasses the final assembly of Nvidia’s powerful AI servers.<sup>5</sup> Notably, from well-known global enterprises like TSMC to modest-statured component suppliers like EMC, EM technology companies in Asia may be one of the largest beneficiaries of this explosive growth in artificial intelligence and machine learning.<sup>0</sup>



AI server supply chain sectors and their respective companies as of April 16, 2023

<sup>4</sup> Banoula, Mayank. “Machine Learning Steps: A Complete Guide!” simplilearn.com, Simplilearn Solutions.

<sup>5</sup> Hung, Albert, “AI Servers: deconstructing the BoM and understanding potential upside for Asia tech hardware.” JPMorgan Equity Research, JPMorgan Chase & Co., 16th April 2023.

## Portfolio Holding Case Study

### Identifying the Paradigm Shift

We believe that the advent of AI and machine learning is a paradigm shifting event with significant equity outperformance potential in the EM space, particularly in Asia. More importantly, we are at the beginning stage of this multi-year shift with a significant runway ahead of us in the depth and breadth of value creation. As the development of AI continues to evolve and mature over time, existing business models will be revitalized and new opportunities will be created. Two examples come to mind:

- IT outsourcing companies may witness a transformation in their business models, shifting from the current human-centric delivery model to a machine-based delivery model in the future.
- AI-based tutoring services have the potential to disrupt traditional rote-learning models of teaching, dynamically adapting to students' needs and progress.

Of course, there will be challenges along the way as AI continues to advance. In addition to the obvious moral dilemma and risk that comes with a self-learning entity, hegemonic competition between China and the United States, the two countries at the forefront of AI development, is likely to heat up.

### The Investment Case

Our AI holdings within the portfolio are primarily focused on the AI server supply chain. EM Asia has traditionally been a stalwart of computing hardware. As mentioned earlier, the production of AI servers is entirely outsourced to Taiwan and Korea. Our exposure to the supply chain encompasses the entire production spectrum, ranging from the basic printer circuit boards to the more complex heat dissipation components. We firmly believe these companies have the ingredients to generate significant equity value in the AI space going forward.

We would like to thank the sector analysts on the team for their contribution to the report.

#### JOHCM Emerging Markets Discovery Fund Top 10 Holdings as of March 31, 2023

Kpit Technologies	2.07
Alchip Technologies	1.88
E Ink	1.65
Voltronic	1.64
Airtac International	1.62
Narayana Hrudayalaya	1.58
Global Unichip Corp	1.56
Varun Beverages	1.47
WNS Holdings	1.46
Anglogold Ashanti	1.43

Please note, securities mentioned in this article are not holdings of the Fund at the time of publication. Holdings are subject to change without notice.

Source for all data JOHCM/Bloomberg (unless otherwise stated)

***An investor should consider the Fund's investment objectives, risks, and charges and expenses carefully before investing or sending any money. This and other important information about the Fund can be found in the Fund's prospectus or summary prospectus, which can be obtained at [www.johcm.com](http://www.johcm.com) or by calling 866-260-9549 or 312-557-5913. Please read the prospectus or summary prospectus carefully before investing.*** The JOHCM Funds are advised by JOHCM (USA) Inc. and distributed through JOHCM Funds Distributors, LLC. The JOHCM Funds are not FDIC-insured, may lose value, and have no bank guarantee.

Past performance is no guarantee of future results.

#### RISK CONSIDERATIONS:

The Fund invests in international and emerging markets. International investments involve special risks, including currency fluctuation, lower liquidity, different accounting methods and economic and political systems, and higher transaction costs. These risks typically are greater in emerging markets. Such risks include new and rapidly changing political and economic structures, which may cause instability; underdeveloped securities markets; and higher likelihood of high levels of inflation, deflation or currency devaluations.

Emerging markets involve heightened risks related to the same factors, in addition to those associated with their relatively small size and lesser liquidity.

The small- and mid-cap companies in which the Fund may invest may be more vulnerable to adverse business or economic events than larger companies and may be more volatile; the price movements of the Fund's shares may reflect that volatility.

The views expressed are those of the portfolio manager as of June 2023, are subject to change, and may differ from the views of other portfolio managers or the firm as a whole. These opinions are not intended to be a forecast of future events, a guarantee of future results, or investment advice.

