Investment Insight

Artificial intelligence is transforming global business:

Why investors must look beyond the technology sector

The performance of *Nvidia,* the undisputed winner in commercialising AI, bears testimony to the huge surge in interest and the excitement around artificial intelligence (AI). It took Nvidia almost twenty-five years after its IPO as a producer of graphic cards for computer games to reach a valuation of USD 1 trillion, a level it broke in June 2023. Just nine months in March this year, its valuation doubled to USD 2 trillion and early this month it broke through USD 3 trillion. Nvidia is now vying with Apple and Microsoft to be the most valuable publicly listed company in the US. It has also been powering gains in the S&P 500. The index has returned 12.5% year-to-date but take away Nvidia's share price performance and its gains would fall by a third to 7.9%.

We have held Nvidia in the J. Stern & Co. World Stars Global Equity Fund since early 2022. We remain very positive about the company and its prospects for value generation.

Applications and use cases have run far beyond available computing capacity and there is an extraordinary demand for computing capacity due to the rapid and growing adoption of AI by all industries. Over the past year, we have written several investment insights on AI – about the rise and significance of ChatGPT, why Nvidia is best placed to capitalise on the demand for AI, and why we continue to hold Nvidia despite its strong share price performance.

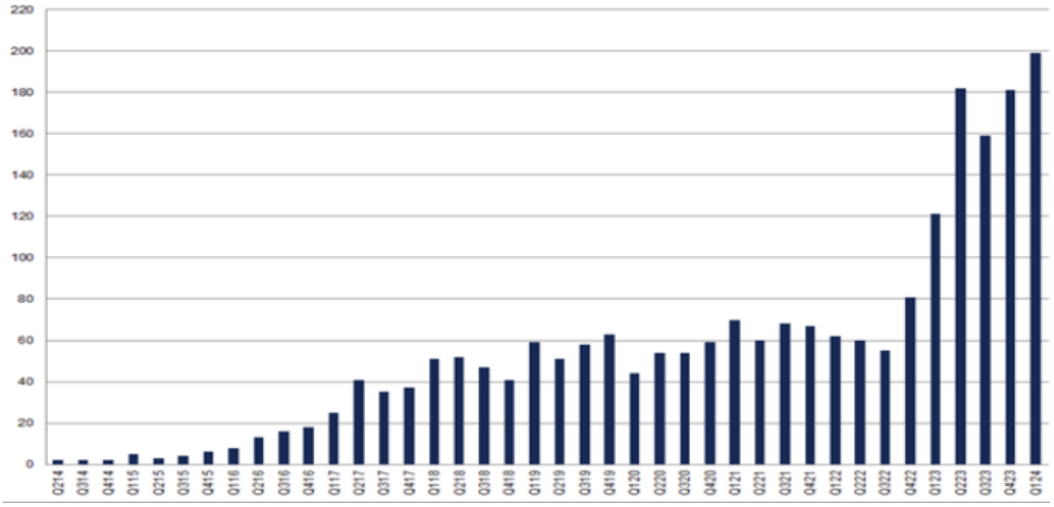
Nvidia has a strong competitive position and an attractive business model with strong free cash flow generation. It is at the forefront of addressing the demand for computing capacity and we expect it to continue to deliver strong growth in revenues, profits and cash flows. Nvidia is only one of many of the companies we hold that will benefit from AI and we believe that investors must look beyond the technology sector.

AI: more than a technology play

Today, AI is most associated with the technology sector. However, we believe it will create great investment opportunities across many industries. The digital advertising companies, *Meta* and *Alphabet*, have incorporated AI into their products and are seeing immediate returns. Both companies are experiencing a reacceleration in growth as AI enables them to recommend better content, increase user engagement, serve more appropriate ads and improve conversion and monetization. Ultimately, AI makes it easier for advertisers to reach their target audience and means more value accrues to the platforms that implement it.

AI is increasingly on the agenda of most companies and has been a focus in recent earnings calls across a wide range of industries.

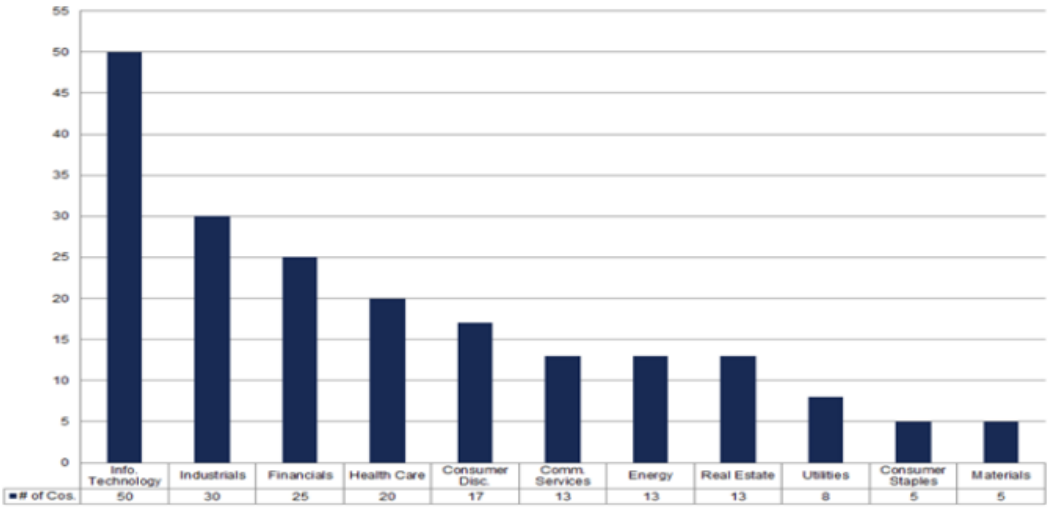
S&P 500 Companies Citing 'AI' on Earnings Calls 2014-2024



Source: FactSet

While technology companies are the most prevalent, industrials, financials and healthcare companies have all been talking about AI too.

S&P 500 Companies Citing 'AI' on Earnings Calls Q1 2024



Source: FactSet

AI and industrials

The industrial sector has multiple ways to benefit from AI. First, as an enabler to companies across many sectors from consumer to utilities to manufacturing, industrial stocks can benefit from the development of AI. They can expedite product design, optimise production processes, manage complex global supply chains and enhance predictive maintenance techniques. Secondly, industrial companies are benefiting from the resurgence in physical asset spending, after decades of underinvestment, in both the public and private sector. And

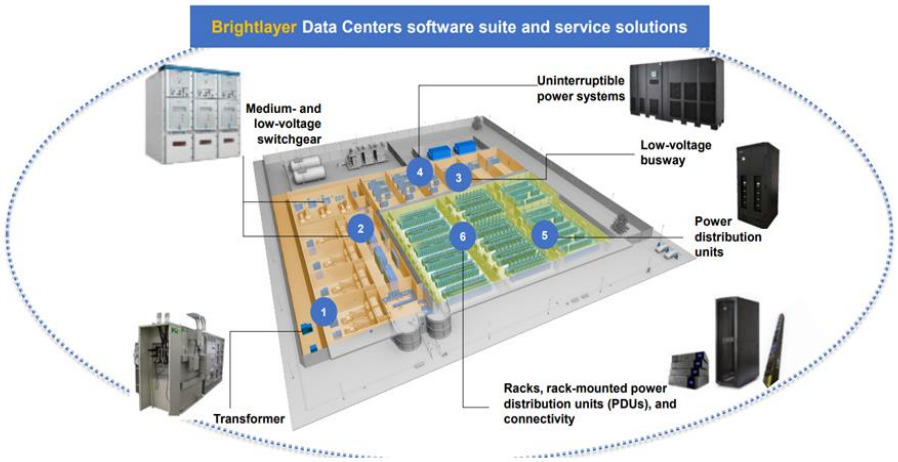
in their own businesses, industrials are driving greater efficiency, productivity and profitability.

AI data centres are power-hungry. A large AI data centre is estimated to require around 100MW of power, compared to 20-30MW for an equivalent data centre five years ago. Some of the large hyperscale computing companies have been signing deals above 400MW for their latest data centres. These are data centres that have a footprint of millions of square feet and can accommodate tens of thousands of servers. As their growth accelerates, they need greater power generation and grid capacity as well as more effective power management systems within the data centres themselves. This demand has fuelled performance for two of our industrial holdings, *Eaton* and *Amphenol*, which were up 40% and 34% year-to-date at the end of May.

Eaton is a leader in intelligent power management solutions, benefiting from both the resurgence in utility and grid infrastructure spending and the demand for data centre solutions. These two end markets accounting for approximately 10% and 14% of sales respectively. The company's solutions for data centres include switchgear that protects equipment from the threat of electrical overload, transformers that are used to step down (or step up) voltage levels between the utility feed and the facility's electrical distribution system, power distribution units (PDUs) that are used to distribute power to racks, and uninterruptible power supply (UPS) systems that smooth out power quality issues like surges or sags that could impact equipment.

Eaton has seen an unprecedented spike in orders for the business. Management increased its expectations for data centre demand growth during its more recent earnings release to 25% CAGR for the period 2022-2025, up from the prior 16% outlook given just two quarters earlier. At the same time, the company has benefitted from a surge in utility capex forecasts and spending on grid infrastructure to meet increased power demand, build resiliency and enable energy transition to net zero. The demand for electrical components has led to supply shortages in recent quarters. Medium voltage equipment, like transformers and switchgear used in grids, renewables and datacentres, has lead times extending to 1-2 years.

Eaton offers broadest portfolio of data centre power management solutions



Source: Eaton

Similarly, *Amphenol* a leading connector and sensor company, has also seen an accelerating demand for AI-related applications. Given AI systems are interconnect-rich systems with high speed and low latency requirements, the content opportunity for connectors in next-generation AI data centres is multiple times higher than for traditional data centres.

The ability to support high data transfer rates is instrumental in achieving the performance levels required for complex computation and data processing. This is especially important in training and inference tasks, where timely processing of data is crucial for the performance of AI algorithms. At the same time, the critical nature of connectors to the efficiency and economics of AI data centres means that customers are consolidating their supplier lists to the largest players. Amphenol has indicated that AI was already a USD 400-500 million business for the company at the end of 2023, with market expectations that it could grow to USD 1 billion in sales by the end of 2025.

AI and financial services

The financial services sector has also seen a strong uptake in the adoption of AI. Despite the initial headlines that AI would be used in the front office to make investment decisions, it is in the back office where the AI is delivering significant productivity and operational improvements. The financial services industry relies upon extensive documentation for client agreements, terms of services and legal and regulatory compliance, AI can summarise complex terms and help people understand things faster.

For example, JP Morgan, the largest US bank, has noted that it has processed 50% more 'Know Your Customer' (KYC) files with 20% fewer people thanks to AI development. The Swedish fintech payments company, Klarna, recently discussed the benefits that it has achieved with the adoption of AI by using it within its customer service department to replace the work of 700 full-time customer service agents. At Klarna, AI is powering two-thirds of the customer service chats after one month achieving a faster resolution time of two minutes on average, compared to 11 minutes previously. Klarna estimates this will save the company USD 40 million. These are just two use case examples for the tangible benefits that financial services companies can achieve by adopting AI technology to replace outdated IT systems.

AI and healthcare

The healthcare sector is set to be a major beneficiary from the implementation of AI. Technology companies have attempted to innovate healthcare with limited success. *Amazon* partnered with Berkshire Hathaway and JP Morgan to create Haven in an attempt to overhaul the US healthcare system and provide lower costs, greater access and better affordability. The plan was for the three companies to implement it for their own employees and to expand it to others. It has since closed down. *Alphabet* houses several healthcare companies inside its Other Bets division, including Calico, Verily and Fitbit, which collects health data. Apple also has ambitions to transform healthcare with its Apple Watch and iPhone, which also monitor health data, but it has not yet had the impact it sought to achieve.

Nvidia has identified the healthcare sector as an important sector to partner with and encourage the adoption of AI and accelerated computing. It has developed many different industry software suites to encourage the adoption of AI.

Drug discovery is a costly and process with many stages significant opportunity and it can take a decade to bring a drug from discovery to the market. Industry R&D spending is forecast to top USD 250 billion in 2025. The combination of complex factors to be considered when developing a new drug, including the genome, epigenetics, metabolomics and microbiomes, and the availability of large dynamic databases, make it a good problem for AI to help solve.

AI can help in all stages of the drug development process. It can help identify drug targets faster, it can help simulate and predict which compounds are best for lead discovery and optimization, it can help with candidate selection to choose molecules and measure the interaction, and it can help test the safety and effectiveness of a drug. AI also enables companies to work on rare diseases where it might not have been economically viable to have done so in the past. Studies have shown that AI can bring a cost saving of between 25-50% in the drug development stage.

Nvidia has created a specific BioNeMo software suite that allows researchers to use different pre-built models to help accelerate drug discovery. There are several different software programs within BioNeMo, for example MoFlow for molecular flow and molecule generation, DiffDock for how a molecule can bind with a protein, and ESMFold for protein structure models. Offering this 'pipeline as a service' helps to expand the use cases for Nvidia hardware and generate new software revenue streams for the company.

An early adopter of the Nvidia BioNeMo suite is Amgen, which estimates that it has enabled a 40x speed up in training its custom models and a 15x to 100x speed up in post-processing data. Amgen has installed an Nvidia DGX SuperPod supercomputer at its subsidiary deCODE Genetics in Iceland. deCODE Genetics has one of the largest libraries of deidentified human data, almost 300 petabytes of data that can now be analysed using the supercomputer and AI.

Opportunities beyond technology

We believe it is important for investors to realise the scale of the AI opportunity and understand what it means for individual companies. We are in the initial stage of building out the technology infrastructure, led by Nvidia, the provider of computing capacity, and complemented by the many other industrial business that are providing solutions for the physical build-out.

Over time, companies that adopt AI will see benefits in terms of productivity, efficiency gains and new product development in ways that would otherwise have been unachievable. That is why we see great opportunities today to invest in the 'picks and shovels' companies that facilitate the development of AI and to identify companies that will benefit from AI use cases in their business models.

AI is still in its infancy but we believe it will have a far-reaching impact across the broad economy for years to come. There will be winners and losers – those companies that incorporate AI will succeed and those that ignore it will do so at their peril.

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