

FORWARD THINKING | ARTICLE - 4 Min

# 2024, a crucial year for artificial intelligence

By PAMELA HEGARTY, VINCENT NICHOLS 14.03.2024

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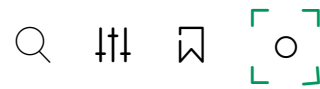
**In this article:** Artificial intelligence is a pivotal theme driving the digital transformation across all sectors of the global economy. As the technology continues to proliferate into new applications, 2024 is already shaping up to be a crucial year in the development of the investment opportunities that AI offers, write [Pamela Hegarty](#) and [Vincent Nichols](#).

**Where do we go from here? Nine developments in 2024**

**AI as a key growth driver**

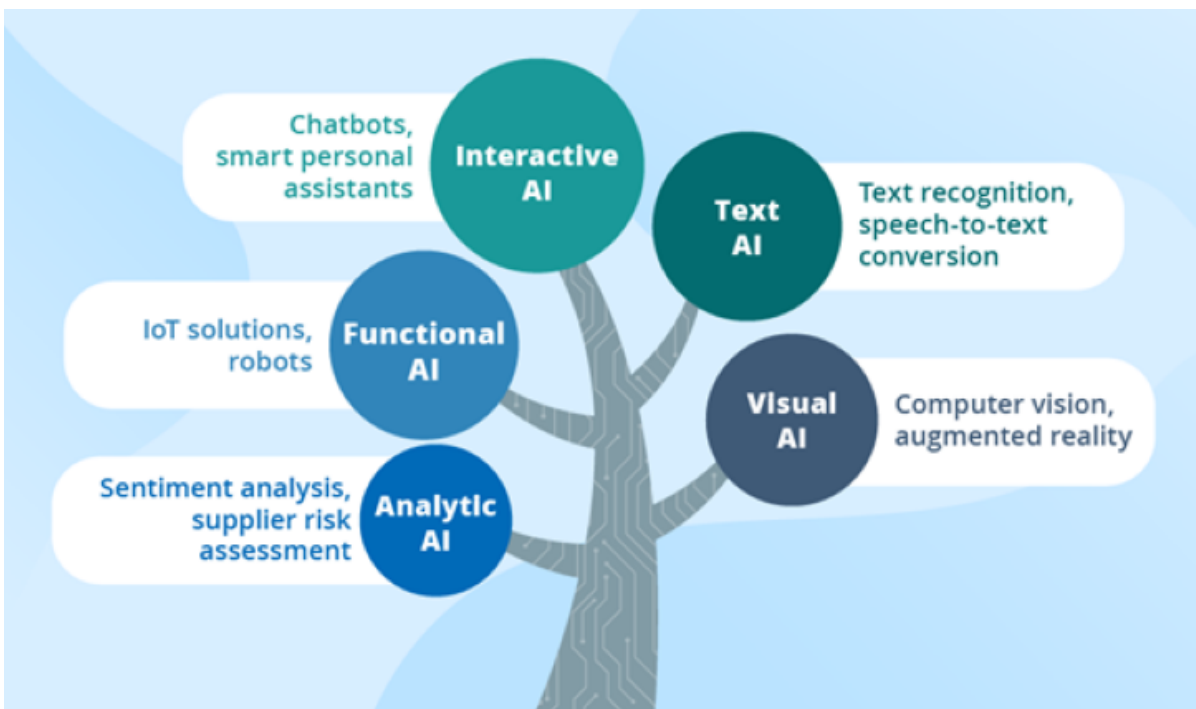
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The launch of ChatGPT in November 2022 marked an inflection point in the evolution of AI. It took the use of so-called large language models – a branch of generative AI that extends the capability of deep learning algorithms from analysing *existing* information to generating *new* content – to a higher level.



individuals to use the technology.

The release of ChatGPT set off a race among cloud service providers and other tech companies to expand their datacentre infrastructure, software stacks, foundation models and applications. Several leaders in the field published outsized positive revisions to their earnings and saw remarkable stock returns in 2023 and the first months of 2024.



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Source: [5 Types of Artificial Intelligence That Bring Value to Business \(scnsoft.com\)](https://scnsoft.com)

# Where do we go from here? Nine developments in 2024

Over the course of 2024, we expect:

Continued growth of the infrastructure for training AI models – Capital



The emergence of a credible competitor to the leading provider of graphics processing units (GPUs) as it ramps up its MI300 chip, which it expects to be competitive for AI model training workloads. A potential industry shift towards software that can fit with different hardware could begin to work in its favour as it continues to collaborate with the open-source software ecosystem

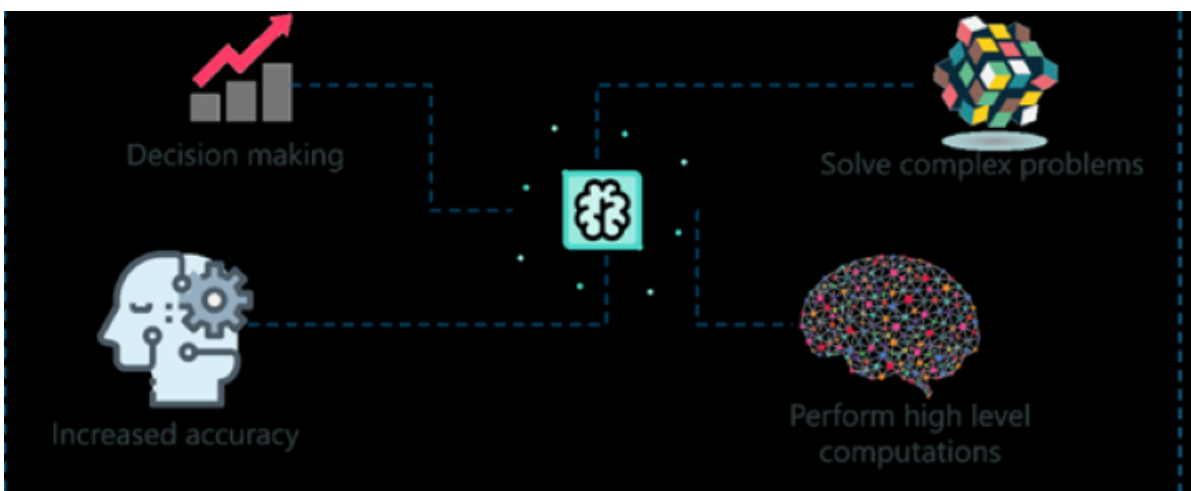
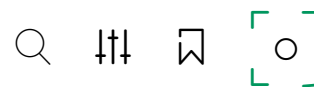
We expect GPUs to power most AI workloads given their performance and flexibility even as a wide range of leading tech companies looks set to continue to use application-specific integrated circuits (ASICs) in select high volume applications.

AI will likely be a major driver of semiconductor demand for the remainder of the decade. Logic and memory chip companies, foundries and semiconductor capital equipment and materials providers should benefit. AI inference (whereby a trained model is deployed into a production environment) will migrate from the cloud to [edge computing](#) and into devices over time

There is an emerging opportunity for the back-end networking of AI supercomputers, with Ethernet adoption outpacing InfiniBand growth, due to its ability to support multi-tenant cloud infrastructure

Providers of servers, data storage equipment, optical networking gear and cyber security platforms will likely see incremental revenue opportunities. It is critical to ensure high bandwidth for AI supercomputers to keep GPUs busy, as well as to make systems energy-efficient and minimise their environmental impact

Cloud service providers could develop larger, more powerful AI systems as they increase the number of parameters in the models and make use of larger datasets. Software companies will likely continue to



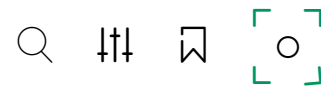
Uses for AI; source: [What-Is-AI-Types-Of-Artificial-Intelligence-Edureka.png](https://www.edureka.co/blog/ai-types/)  
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Use cases for AI will likely proliferate. UK newspaper *The Economist* has pointed out [several interesting scientific applications](#), including pattern recognition (for drug discovery and materials science), predictive engines (folding proteins), complex computer simulations (weather models and simulating processes) and the use of generative AI to design new chemicals.

Companies are using generative AI for a broad range of activities including software development, chat bots for customer service, writing contracts and automating the production of marketing content.

In the industrial sector, manufacturers and equipment providers are implementing AI systems to enhance process controls and [virtual digital twin models](#). In healthcare, the journal *Nature* [published a scientific study](#) in the Netherlands that describes the use of AI for medical image analysis to classify tumours, which could improve the decision-making of surgeons during brain procedures.

We believe bottom-up fundamental research will be critical to identifying



# AI as a key growth driver

As AI adoption proliferates, there are several risk factors to monitor with respect to fundamental analysis, environmental, social and governance (ESG) factors and investor sentiment.

**A growth perspective** – the speed and duration of infrastructure development are uncertain, and there could be pauses for ‘digestion’ during the process. AI expenditure could crowd out budgets for other information technology projects.

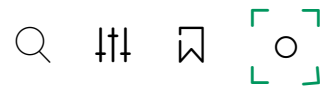
In late 2023, the US tightened its restrictions on semiconductor exports to China. While the goal was to limit their use for military applications, there could be as-yet unseen consequences; there is also potential for further escalation.

**ESG** – irresponsible users could abuse AI for surveillance, hacking and the creation of deep fake news. Biased datasets may result in incorrect output from AI models. Data privacy and security are issues, as well as the significant energy requirements for powering the datacentres that run AI models.

**Investor sentiment** – we may see valuations fluctuate as the technology moves through the adoption cycle. Some pundits have highlighted the existential risks of using AI for warfare and other nefarious applications.

On balance, we are optimistic about the pervasive adoption of artificial intelligence and its positive impact on

- cloud service providers



the semiconductor supply chain.

- companies that are using AI to improve business processes.

We see AI as a key enabler of

- recommendation engines
- automated customer service systems
- manufacturing automation
- drug discovery
- document production
- educational tools.

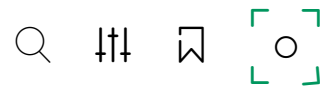
*To learn more about how we target opportunities in AI and other tech innovations, view our Disruptive Technology Fund*

With such diverse potential, we believe AI will be a key growth driver in 2024 and beyond.

*More articles on how new technologies are disrupting conventional business models:*

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Portfolio perspectives | Video – 9:40 MIN

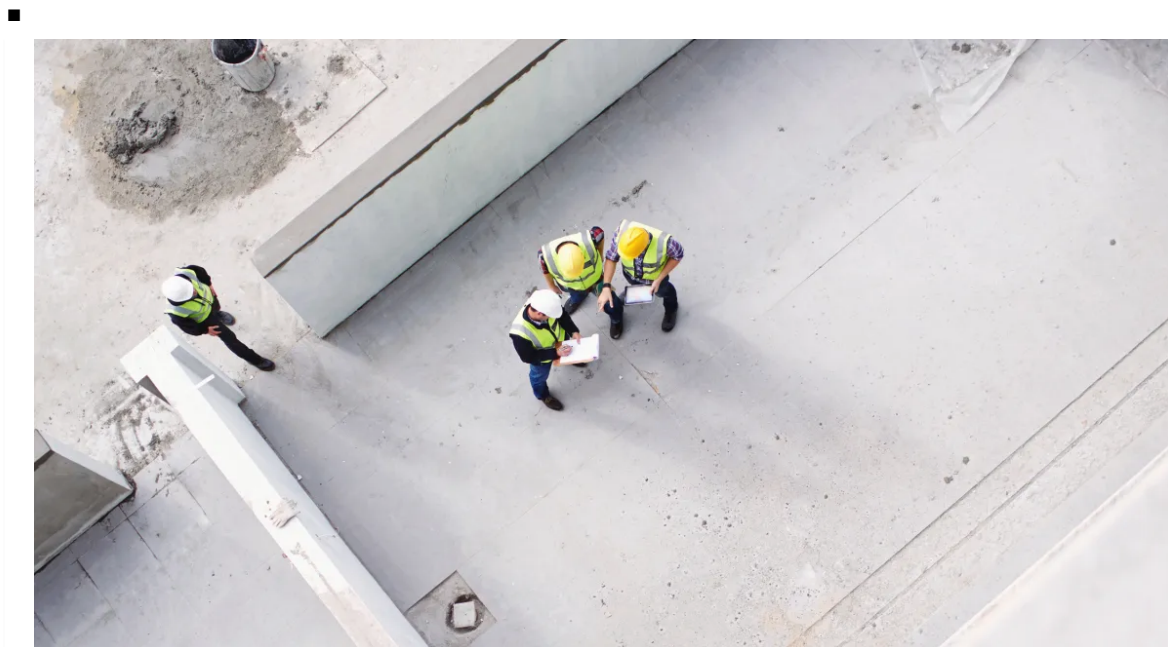


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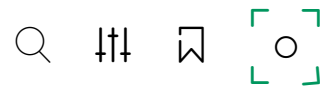
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