

Baillie Gifford update

Second quarter 2023

Key information

30 June 2023



Assets under management: \$292.8bn



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All in good time: investing in artificial intelligence

Ben James, Investment Specialist Director

What would you have invested in at the beginning of the PC era in 1977? Or at the beginning of the internet or smartphone eras? These are helpful thought experiments in times of significant technological change.

At the risk of hyperbole, this year's breakthroughs in Artificial Intelligence (AI) suggest we could be at the start of another computing paradigm akin to the PC, internet or smartphone. We have been commenting on the progress in AI for some time, and we remain deeply curious about it.

The most noteworthy recent breakthrough has been the success of OpenAI in making AI technology available to non-technical users with the release of ChatGPT. The service signed up a hundred million users in just two months as engineers and entrepreneurs recognised the potential of this computational approach.

AI can augment human software programmers and enhance productivity, and we can expect AI services to write most computer code in the future. The implications of AI-generated student essays are less encouraging and only a minor example of the governance challenges these systems will create. AI will transform many parts of the economy. But it would be foolhardy to make specific predictions. Therefore, we have time to study and learn as companies incorporate the technology into their products and services.

AI and opportunities

We can confidently say that AI systems will require a lot of silicon. OpenAI has suggested that the computing power needed to run the latest models doubles every 14 weeks.

Our holding NVIDIA is a key supplier and enjoys formidable advantages, as the chip technology it has built over decades for computer games has proven ideally suited for AI computation. Around 90 per cent of generative AI programmes are trained using NVIDIA chips.

The semiconductor industry depends on another holding, ASML. Its exceptional engineering produces cutting-edge chips, and AI is just one driver of the strong demand we anticipate over the next decade.

Many industry solutions already use AI, such as Aurora Innovation (autonomous driving), Horizon Robotics (AI solutions), Recursion Pharmaceuticals (drug discovery) and Tempus Labs (cancer treatment).

Consumer-facing services such as ByteDance (owner of TikTok) and the digital marketing and metaverse companies we hold, such as Roblox, are also experimenting with AI.

It may surprise some to learn that Tesla is currently one of the largest AI companies in the world. This year, it rolled out initial access to its full self-driving software in the US. The software has now driven 150 million autonomous miles, providing a vast data advantage over the rest of the automotive industry. The system's capability is already impressive, but the pace of improvement will be most important over time. New vehicle sales will face headwinds from higher interest rates in the short run. Still, electric vehicles continue to gain share and Tesla, as the market leader, has the scale and profitability to invest and grow in challenging conditions. In the long run, its software and AI capabilities will be deployed to a much more extensive fleet of vehicles, and others will struggle to compete.

Informed thinking

We continue to engage with the computer scientists driving the industry, from Geoffrey Hinton, one of the godfathers of AI and ex-Google, Kai Yu of Horizon Robotics and Emad Mostaque (Stability AI) to Sam Altman (OpenAI) and Jensen Huang (NVIDIA).

There is a Baillie Gifford Chair in AI Ethics at the Edinburgh Futures Institute. We are sponsoring the programme director role on Responsible Artificial Intelligence at the Leverhulme Centre for the Future of Intelligence, University of Cambridge.

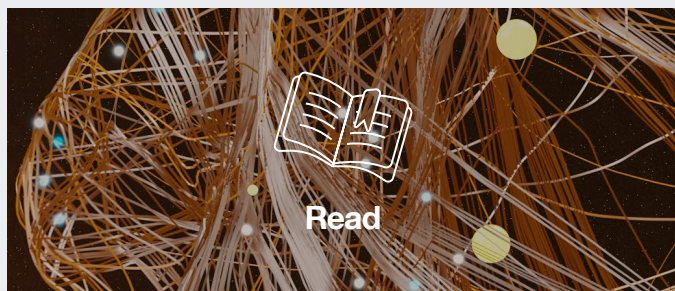
The future of AI

AI and machine learning are penetrating multiple industries, from commerce and healthcare to finance and transport. As we have said, any company not leveraging advances in software, machine learning, and AI will experience significant headwinds to growth.

While we are wary of making any firm predictions of how AI might transform society, what is almost guaranteed is that companies, tools and services will be built using this technology that will exceed our wildest imagination.

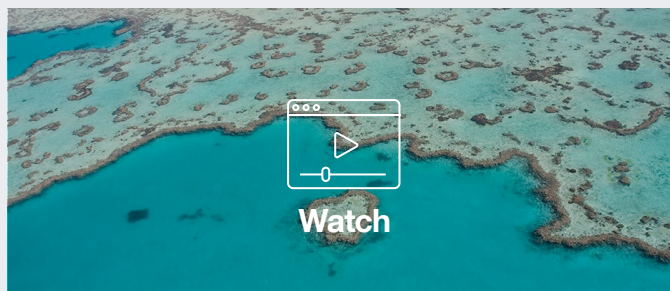
Our access to some of the leading minds working on this, in both the public and private space, helps us keep up to speed with developments and understand how they may impact our lives. We will continue to patiently seek opportunities to invest in this progress on our shareholders' behalf.

Updates you won't want to miss..



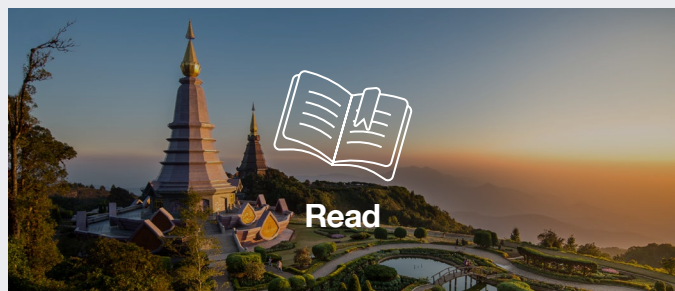
Our Shared Beliefs

Our purpose at Baillie Gifford is clear; to add value for clients, support companies and benefit society through long term investment. This ambitious goal unites us as a firm and a partnership



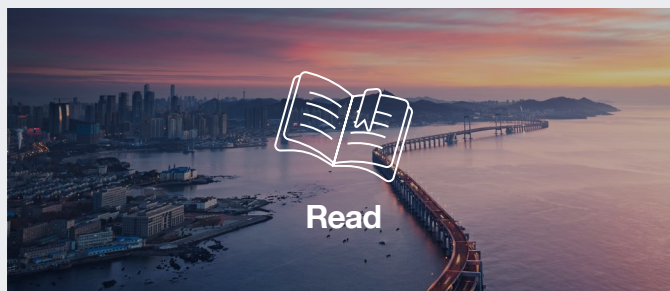
Recorded Investment Updates

Looking for a short but punchy quarterly strategy update? Following feedback from our client base, we have produced video recordings with several of our investors where they share their thoughts on the last quarter.



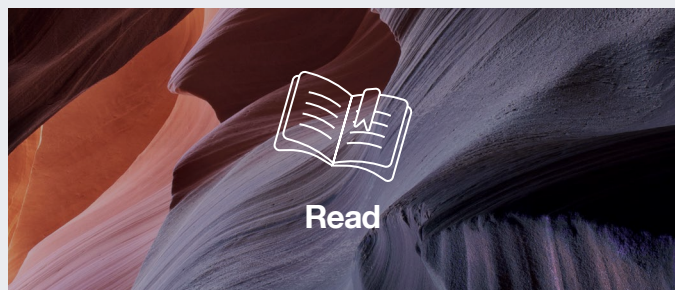
Indonesia powers a green transition

The Island nation's natural wealth makes it crucial to a low-carbon future.



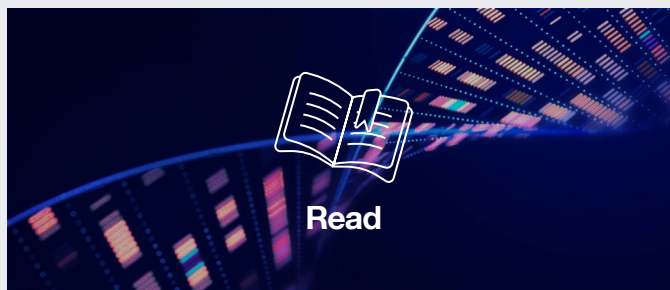
India's data-driven growth stocks

Pacific Horizon spots investment opportunities in a smartphone-transformed nation



Reflections on a recent trip to China

Qian Zhang reflects on the challenges facing Chinese innovation.



Europe's new growth stars

Three companies helping turn the continent from innovation backwater to a hotspot.

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