Investing in the AI revolution

Giles Tulloch explains why compute and data will be at the heart of the next decade

Just as the internet, mobile and cloud computing redefined how we live and work, artificial intelligence (AI) is emerging as the next major technological paradigm. Its ability to automate complex tasks and generate novel solutions is poised to fundamentally reshape industries and human society on a global scale. A recent trip to Silicon Valley and Seattle, where we met with leading technology companies across the AI ecosystem, reaffirmed our conviction that AI is still in its early days and poised to drive transformational change across many industries.

Nvidia's durable competitive edge

Nvidia is at the centre of today's AI revolution. We have invested in the company since early 2022 because we think that its leadership is built on a broad and deep competitive moat.

We highlight three factors that underpin Nvidia's edge. First is the company's relentless product cadence. Bringing new products to market on a clear annual roadmap allows customers to plan their computing infrastructure buildout with confidence. Second, its CUDA software platform has become the lingua franca for developers, creating network effects that make switching awkward. Finally, Nvidia's full-stack approach, from chips to networking, ensures performance and integration that competitors struggle to match.

Nvidia's most credible challenge currently comes from ASIC or "custom silicon" chips. Hyperscalers like Alphabet and Amazon are developing their own application-specific chips. Others like Alphabet and Meta are working in tandem with Broadcom to design chips that can handle large, repetitive workloads specific to their businesses. However, we think that these solutions will complement rather than replace Nvidia's GPUs. Both the large training and inference markets for AI will rely upon GPUs, given the inherent flexibility in their design. In practice, the hyperscalers are likely to balance in-house designs with merchant silicon, ensuring strong demand for Nvidia's products.

Beyond digital: Physical AI and synthetic data

During our trip to the West Coast, it became clear that the AI story is no longer confined to chatbots and image generators. 'Physical AI' – robotics, autonomous systems, and humanoid machines – is emerging as a major driver of demand.

For physical AI to work, it requires reliable data. The problem is that collecting real-world datasets for rare events can take years, for example road obstructions for self-driving cars. Companies like autonomous driving startup Pony.ai are generating simulated driving data at scale, allowing AI models to learn from rare but vital scenarios without having to wait for real-world datasets. The prevalence of synthetic data reminds us about what Meta did after Apple's IDFA changes limited its access to user-level data. Meta reinvented its data infrastructure to power AI-driven advertising. The constraints accelerated innovation and Meta has become one of the leaders in AI.

We expect data issues to be a key hurdle for broader enterprise adoption of AI applications. While errors in a chatbot might be tolerable, mistakes in enterprise systems can have major financial or legal consequences. This brings us back to a fundamental principle: AI can only be as effective as the data it is trained on. As enterprise AI grows, demand for tools that manage, clean, and structure proprietary data will intensify.

A structural growth story

The key takeaways from our West Coast meetings are clear. Demand for computing power is set to grow exponentially, custom silicon will likely coexist rather than replace current chips, the frontier of AI is expanding into robotics and autonomous systems, and technology that provides solutions to overcome data challenges currently causing a bottleneck will reap considerable rewards.

In short, we do not view AI as a passing fad, but as a structural growth story. The companies that provide the compute power, the data infrastructure and the applications to power AI will be at the centre of one of the most compelling investment themes of the next decade. That is why, for long-term investors, it is not about timing the hype cycle but about identifying the companies that are building durable competitive advantages within AI and working to realise its potential.

Written by J Stern & Co partner, Giles Tulloch