BACK TO THE FUTURE

Article

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Finding an investment firm that hasn't written about the prospects for artificial intelligence (AI) is a tall order. A common misconception across many of those pages is that AI looms on the horizon. AI is already everywhere. It already helps us all do something every day – and probably many things. That said, whilst there is no doubt as to the importance and almost unimaginable potential of these technologies, separating hype from reality is still necessary.

Investment Manager Des Armstrong's efforts to try to distinguish the sustainable and profitable investment case from the science fiction started in 2016 and has continued since. We look back three years to research trips focused on this subject and consider what has changed since.

DES ARMSTRONG
Investment Manager

In 2016, I travelled to the headquarters of one of the world's most successful robot manufacturers. Over time, the company has maintained high levels of investment, and has continued to innovate, build on its market leadership, and deliver robust financial results and returns for its shareholders.

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For years, the firm could credibly be described as cutting-edge. But during my conversation with the Chairman and CEO, I was struck by his outlook. His conviction was that the company's big opportunity was still ahead. Through deep learning, powered by artificial intelligence programming and computation, he could foresee a digital ecosystem across its installed base of robots delivering the industry's vision of SMART manufacturing. As the conversation continued, he offered to introduce us to a joint-venture partner.

This partner was a pioneer in the evolving field of deep learning, developing deep learning neural networks to enable predictive maintenance in robots.

During that consequent meeting with their partner at its Tokyo headquarters, it was in turn suggested that we attend RE.WORK, a highly regarded deep learning summit where a senior member of its team was scheduled to make a keynote speech.

So the next step was a visit to San Francisco and Silicon Valley in early 2017 for the RE.WORK summit. I think realism is one of the distinctive characteristics of Walter Scott. At least within the Research team, our team discussions, while good-hearted, are robust and honest enough to expose anyone claiming to be an expert. In that vein, I fully recognised that I would not return from my trip fully understanding the science behind deep learning. However, I wanted to gain as much knowledge as I could, and, just as importantly, hear different perspectives. I added a lecture at Stanford University to my itinerary.

The lecture, entitled "Artificial Intelligence: Separating Hype from Reality", was given by Andrew Ng, then head of Stanford's computer science department and internet giant Baidu's chief scientist. He began the lecture by looking back on the development of AI related algorithms over the previous 30 years. While much of the computational science had been available for years, he explained that what had changed was the enormous amount of unstructured data generated through the internet and mobile communication, and the emergence of high-performance computing power enabling algorithms to work at scale.

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He offered his rule of thumb that speaks to the potential disruption, but also its limitations: if a typical person can do a mental task with less than one second of thought, this can probably be automated using AI either now or in the near future. From an entirely selfish perspective, I was delighted when he added that we were 100 Nobel prizes away from being able to design an active, bottom-up robo investment manager.

Among numerous other meetings, I also met the CEO of a start-up specialising in the development of autonomous robots for the logistics industry with a specific focus on those that can autonomously navigate warehouses to pick and transport goods. The CEO conceded that the concept of "unsupervised" learning, where the robot could recognise unlabelled data, was decades away. For the robot to work in a dynamic environment with humans or a forklift truck in the way or even a pallet incorrectly positioned within a warehouse would take even longer.

Nevertheless, the company, which had just completed its Series A funding, was already running a number of pilots with some heavyweight industry operators. One of its demonstration films showed its robots being used in a distribution warehouse for a very well known Spanish clothing company that processes 3 million different stock-keeping units each week. The robots were enabling real-time inventory management by continuously navigating the aisles of the distribution centre and using radio frequency identification technology to check and confirm the inventory of clothing in the warehouse.

Among many conversations, one with the CEO of a non-profit organisation working in Africa stood out. The organisation aims to lift people out of poverty by outsourcing the manual labelling of giant databases of unstructured data.

Three years on since my trip, and the Japanese robot manufacturer and its local partner have worked with several US firms to develop and launch an open platform for the manufacturing industry, targeting improvements in productivity and efficiency.

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Last year, the World Economic Forum named the start-up that I met as one of the most innovative start-ups globally. The Spanish retailer has since extended its inventory control, through RFID from factory floor to shop floor.

And the non-profit organisation now has a roster of Fortune 500 clients. Its social business model has brought employment to more than 10,000 people with an average income increase of 3.7 times over 4 years. More than 10,000 people have been brought out of poverty.

The number of AI applications we knowingly and unknowingly interact with every day has increased significantly. Look at global leading companies across sectors and few are not using AI in some way to improve efficiency, predict future demand or improve upon today's products and services.

Without the hype and science fiction, we would probably be blown away with what has been achieved over the past three years. And yet, there is so much more to come. We all know that the technology giants that have become household names over the past decade or so continue to invest immense sums in AI. But we mustn't forget the investments being made by smaller companies using AI to improve or adapt their specific product or service. These combined, incremental steps are just as important for corporate success, wealth creation and for the end consumer, as the "moon shot" advancements, as beguiling as they will always be.

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