

Evenlode Global Investment View

June 2018 – AI – The Next Big Thing



EVENLODE
GLOBAL INCOME FUND

Artificial Intelligence is the stuff of science fiction. Invariably, malicious machines (HAL, Skynet) gain awareness of their own existence and work to usurp their masters. Whilst we may be some way off from the point of destruction by our silicon helpers, AI is coming on in leaps and bounds. On our recent trip to Silicon Valley in California, Chris and I got to hear first-hand how companies are tackling the challenges and opportunities presented by AI, the technology required to make it happen and the uses it is being put to. We visited the large companies in the Evenlode Global Income portfolio like Intel, Oracle and Apple, and heard from start-up businesses hoping to use AI to become ‘The Next Big Thing’.

Hello, what can AI do for you?

Some of the uses of AI are very visible to the everyday consumer. If you use Apple’s Siri on an iPhone or Amazon’s Alexa on an Echo, you’re using a form of AI. The system must understand what you’re saying, a simple task for humans but one that, until recently, has been very difficult for computers to master.

Other applications have received a lot of air time because they feed the public imagination. Self-driving cars, or autonomous vehicles, certainly match with my boyish vision of futuristic technology. But the dark side of technology is part of the picture, and sadly recent collisions involving autonomous vehicles have ended in fatality. The debate about the potential safety implications of this and other situations where we hand decision making to computers is part practical, part philosophical, and could shape the future adoption of AI-based applications. Legislators will certainly have their say if safety concerns mount.

Automation of routine tasks could free up people’s time to do other things. Whilst in the Valley we heard a number of start-up companies present, one of which proposed to automate the organisation of jobbing workers’ diaries by listening in to their phone conversations and updating calendars automatically. Again, there are potential negatives. Do people want their conversations eavesdropped on by a silent witness, and are there data security issues if they are? Just in the last week a story has emerged in which an Amazon Echo user unwittingly had their conversation recorded and sent to their contacts [\[i\]](#). What happens to the people who used to do the jobs that are automated away? And again, legislators may want to shape the adoption of technologies that cut across entire industries. Microsoft founder Bill Gates has suggested that robots that automate tasks currently performed by humans should be taxed [\[ii\]](#). So AI is not just about cool tech or making returns on investment, there are real world socioeconomic impacts as well.

And what can AI do for your portfolio?

Thinking about the world of business, the uses of and risks associated with AI can be considered as part of firms’ long-term investment cases. If consumers and companies will be universally touched by the new technologies (which I believe they ultimately will), then it is inevitable that those sectors and businesses found in the Evenlode Global Income fund will be affected. Gazing a little into the crystal ball, here are some thoughts how some of our major sectors might feel the impact:

Consumer goods

Maybe not the first industry that springs to mind when thinking of the Terminator, but the largest sector weighting in the Evenlode Global Income portfolio will be affected if consumers change their shopping habits as a result of AI-enabled experiences. Already consumers are moving their weekly shops from in-store to on-line, and the experience thus far suggests that it is important to be in the top couple of brands.

PepsiCo's market shares on-line are bigger than those in-store, and its Frito Lay snacks division derives 90% of its sales from brands that are number one or two in their sub-category. Combining those stats suggests that brand awareness is important in the digital world. As a thought experiment, imagine a future where we can order what we like, when we want it by shouting at our digital assistant (maybe delivered by drone in a matter of minutes). That's Amazon's vision of Alexa.

Now imagine I'm peckish, and I ask 'Alexa - get me some generic Mexican-style corn-based chips'. Who knows what might come back? Perhaps I'll be more certain of the outcome in asking 'Alexa - get me some Doritos'. A fear stalking consumer goods companies is that they will have their branded offerings diminished as search becomes easier with the internet and AI-enabled assistants. In the next stage of the internet of things, AI might observe our corn chip consumption behaviour, anticipate our need for a snack, and fill up the cupboard with our favourite brand before we know we want it. The (admittedly contrived) Doritos example shows that we might need sources of reassurance in the dematerialised on-line world where decisions are made for us, which might be provided by a familiar brand name.

Healthcare

Treating people's ailments requires a deep understanding of human anatomy, physiology and pharmacology, and often quick decision making in noisy situations where the physicians are not in full knowledge of the facts. A patient presents with chest pains in a busy emergency room - what do the professionals do? Even in the controlled world of medical imaging and diagnostics there is room for interpretation and error.

AI might help healthcare professionals to make decisions. One start-up company we heard from proposes to use natural language processing (NLP) to read all of the literature on medical diagnostic testing, something an individual could never do, and suggest tests to carry out on a patient exhibiting their particular symptoms. The NLP capabilities are provided by IBM's Watson, which famously won the US game show Jeopardy against human contestants.

Other applications surround medical research. Intel have recently teamed up with Novartis to use AI in image recognition on cells^[iii], a crucial function in identifying potential new molecules for development into novel drugs. AIs have learned to recognise cats on YouTube^[iv], but the images in the cellular data are much more detailed. Intel have provided the hardware, Novartis the biomedical knowhow.

Thinking forward, combining analysis of biomarkers, genomics, and physical indications for an individual with information gathered on specific remedies could lead to tailored treatment and prevention programmes. Big data could be used to deliver precisely targeted medicine.

Media and data analytics

As I noted in my last investment view, media companies like Wolters Kluwer have already transformed themselves from providers of printed information to digital deliverers of data and tools. Wolters Kluwer has a division that provides clinical decision support tools with its UpToDate offering. The diagnostics example above could fit into this sort of product.

More generally there is a need to navigate ever increasing amounts of data. Wolters Kluwer in healthcare, Relx in scientific research and Thomson Reuters in law might all be able to deploy AI to help users find what they want, and perhaps suggest things that they had never thought of. I have heard from start-up companies that propose to offer services that aggregate information for businesses or research departments that produce ever increasing amounts of data. Not only do they stitch the data together, by using deep learning AI techniques they can show businesses where there are unexpected correlations in their information. This might lead to more novel insights and rapid business development.

Information technology

Of course, the IT sector itself is at the front line of all of this new capability. As people dream up applications for AI, the IT firms react by developing their products to cope with the increasing demands on the hardware and software that run AI applications. Intel has been building out its product set so that it can offer solutions to data centres that are at the heart of AI training and processing. Cisco must help networks deal with the increasing amount of data traffic that AI will generate. It can also use AI itself to help manage networks and optimise performance, as Oracle has done in its own field with the 'self driving database'. Apple must develop Siri to compete with Alexa and Google Assistant, and has a joint initiative with IBM Watson to put together tools for developers to be able to create AI-based applications on the iOS operating system.

An AI arms race?

Artificial Intelligence is a buzzword and being a buzzword can make it difficult to distinguish the signal from the noise in thinking about potential applications and their effect on businesses. AI will certainly, though, create new opportunities, and enhance existing services.

Adoption will happen over time; the infrastructure will need to be built out, the understanding of what the technology can do will need to be developed by users, and broad acceptance of AI-driven services from autonomous vehicles to clinical decision making will need to occur. The technology is far from perfect. I have found being able to tell Alexa to stop Spotify from playing music around the house is helpful, as I don't need to reach for my phone (which is usually about my person, how lazy!), but I wouldn't describe the interaction with it as being natural. Speaking personally, if such an assistant were to become a bigger part of my day-to-day life it would have to feel more robust and seamless. I'm sure this will happen in due course.

Whatever method is used to interact with machines, the concept of 'Freestyle' chess has shown that humans interacting with technology can achieve routinely better results than humans or computers alone^[v]. People in most job roles from most walks of life will need to get to grips with technology. The rapid adoption of innovations such as the smartphone demonstrates humanity's ability to do this.

Whilst the adoption process is going on, companies with the resources to do so can selectively develop, buy in, or partner to create AI-based applications. Apple, a firm well known for its obsession with the quality of internal product development, bought Siri in 2010. Some, like Intel currently, will prosper by providing the infrastructure that enables AI applications. Apple also fits into the infrastructure theme with 1.3bn devices being used worldwide as a gateway to potential AI-driven services.

We don't select companies based only on their AI credentials. Firms that have good capabilities and barriers to entry in their chosen field is what we're after. The forward thinking will be able to integrate the technology as it develops and evolve their offerings whether it's in the products themselves ('tell me the tests I should do on this patient'), or in the distribution ('give me Doritos'). That way they'll be able to use their cash flows to retain and build on their current businesses.

Ben Peters

Fund Manager

24th May 2018

[i] <https://www.theguardian.com/technology/2018/may/24/amazon-alexa-recorded-conversation>

[ii] <https://qz.com/911968/bill-gates-the-robot-that-takes-your-job-should-pay-taxes/>

[iii] <https://newsroom.intel.com/news/using-deep-neural-network-acceleration-image-analysis-drug-discovery/>

[iv] <https://www.wired.com/2012/06/google-x-neural-network/>

[v] https://www.huffingtonpost.com/mike-cassidy/centaur-chess-shows-power_b_6383606.html