

# **Alternative Asset Management Limited**

## **The pursuit of Intelligent Trading**

The efficient use of Artificial Intelligence (AI) has long been thought of as the panacea for traders and fund managers alike who assume to capture and harness the next move in underlying markets and assets.

Since the creation of Alternative Asset Management in January 2004 its creator, Nicholas Edwards, has poured substantial resources into the development and testing of highly sophisticated leading edge trading systems in partnership with various experienced industry professionals expert in this arena. The Company's philosophy is fairly simple; to create efficient trading systems within trading platforms that can be readily scaled up within a carefully risk controlled environment and managed by professional fund managers.

AI has been at the core of this development and those who work alongside Edwards are committed to the pursuit of excellence. He has built a team of specialists around him, each with core strengths in the various key areas, all with different unique attributes which taken together create an organisation with a deep fundamental grasp of not only the industry but moreover of investor needs and demands. Edwards has therefore sought out some of the best traders in the market from all over the World to deliver the opportunity. Many of these traders have already experienced significant success trading proprietary accounts for wealthy family offices or even their own money, but the common theme is that they must all have achieved returns of over 100% per annum via their own methodology. Edwards has now encouraged these traders to join him with a view to carefully blending their talents with the sophisticated AI approach. Edwards believes that by doing this his traders will bring their enormous experience to the fore and enjoy the added benefits of professional fund management systems and procedures to enable them to significantly outperform.

So, what is AI all about?

In essence AI is all about automating the process of trading thousands and often millions of transactions over short and long term time frames via computerised models. Clever Ph.D.s and often scientists have been

pouring over data for months and even years trying to determine patterns that have high probability of repeating themselves.

According to Bloomberg's Jason Kelly, one of the better known specialists in this arena is Dr. Kearns, a computer scientist who has a doctorate from Harvard University. Kearns has been chasing the dream of creating the perfect code for over 20 years; he wants to "imbue computers with AI" and believes that "instead of mindlessly crunching numbers, AI-powered circuitry one day will mimic our brains and understand our emotions – and outsmart human stock pickers."

"This is going to change the world, and it's going to change Wall Street" says Kearns, who spent the 1990s researching AI at Murray Hill, New Jersey-based Bell Laboratories birthplace of the laser and the transistor.

As finance Ph.D.s, mathematicians and other computer-loving disciples of quantitative analysis challenge traditional traders and money managers, Kearns and a small band of AI scientists have set out to build the ultimate money machine, but they are not alone! There are increasing numbers of specialist teams within the major investment banks and even some fund managers working tirelessly to achieve the same aim.

"For decades, investment banks and hedge fund firms have employed quants and their computers to uncover relationships in the markets and exploit them with rapid-fire trades. Quants seek to strip human emotions such as fear and greed out of investing. Today, their brand of computer-guided trading has reached levels undreamed of a decade ago. A third of all US stock trades in 2006 were driven by automatic programs, or algorithms, according to Boston-based consulting firm Aite Group LLC. By 2010 that figure will reach 50% according to Aite."

.....Indeed this is the pursuit of all those partnerships that have been created by Edwards and some he believes are very, very close to achieving their aims. "Some of our quant analysts have developed systems so sophisticated that they are capable of transacting multiple trades across several markets with reaction times of milliseconds. Trades are placed across multiple markets by systems that can react to the smallest changes in markets which can sometimes result in large turnover for small profit, but the key is to run the profitable trades and cut the non-profitable trades. Our systems have learned how to 'read' from the formation of patterns and react accordingly."

Edwards believes it is crucial to understand the significance and importance of not only trade entry prices, but more importantly, trade exit prices. As he says, “Any old fool knows when to buy but it takes a wise old fool to know when to sell.” This is bought home in milliseconds. Some of our models are programmed to operate skimming trades with huge turnover and tiny profit targets per trade; whereas some of our models are longer term, perhaps over several days or so, but the common theme is to minimise risk via dedicated and careful risk controls. “We like to spread risk wherever possible, and by using multiple markets with multiple strategies over multiple time frames we are able to effectively reduce net exposure while maintaining a very acceptable risk return profile.”

Edwards is keen to reiterate how much emphasis the Company places on risk controls and ‘live time’ knowledge of total exposure to individual markets and asset classes that the funds may have at any given time. Of particular significance and importance to the Company’s approach is the strict adherence to risk management controls. “Style drift and draw-downs are anathema to our philosophy”, says Edwards. “Naturally draw-downs do occur but the emphasis is always on minimising these draw-downs through careful position sizing and calculated risk controls.”

The ever increasing use of AI by many a trader and now fund manager, has not endeared the purists, who would like to believe that systems will eventually break down and thus eventually the complexity of the human brain will always win over. However, Edwards argues, it is often the lack of knowledge and perhaps pure ignorance of how AI really works that causes scepticism among these people; “indeed many are perhaps not prepared to admit their lack of experience and knowledge of AI and thus it is easier to be critical than not. After all, the concept of using ‘rocket science’ in portfolio management is new and leading edge. There are many people who have tried and failed in this business and only now are we seeing the levels of sophistication required to succeed; hence there is little precedent for the bulls and much hard evidence for the bears! However, this is changing, and changing fast”, maintains Edwards. Once the stuff of sci-fi fantasies.....financial markets are now closing in with groups of scientists trying to teach computers to think like traders – and outsmart human stock pickers.

Indeed, the simple reality is far closer to home. Some of the World’s largest investment banks are employing some of the very best brains and spending millions of pounds on research and development of futuristic technology that will soon become commonplace within main stream

portfolio investment. Clever analysts speaking binary language and pouring over complex algorithms whilst using neural networks technology are developing programmes that will recognise future price movement in almost any electronically traded instrument. The expression; ‘Pattern Recognition’ is vogue and virtually everyone is keen to employ not only the technology but also the techno-jargon in advertising their product.

Alternative Asset Management is in partnership with several different companies who have developed their own unique and proven trading systems. In conjunction with these strategic partners, the Company has exposure to experts and some of the very best programming brains from the Ukraine, Poland, USA and UK. However, as a core part of the Company’s strategy it has also invested heavily in Risk Controls and systems helping to achieve Optimum Position Sizing in traded portfolios. “Our view is that however clever our systems may be, we will only achieve true efficiency and significant returns through the implementation of these vital procedures. Indeed we feel that any ‘system’ is only worth perhaps as much as 30-40% of any strategy; 60-70% is everything else!” says Edwards.

Edwards has a wealth of experience gained over his 25+ years of working in the City; from equities stock-broking to specialist country funds advisory work for two of the largest investment banks in these arenas. Edwards has also been MD of his own specialist FSA Regulated broking firm and on the Board of one of the most successful East European asset managers in the market. This combination of skill sets has created a qualified and focused approach to combining fully automated and semi-automated trading within an asset management environment. The results have been impressive with the Company’s proprietary fund achieving a remarkable +379% in 2006 (Source: Synokis Partners). Edwards has now invested heavily and put the prerequisite corporate structure in place ready to launch a range of funds to the professional investor.

Equally important are the industry professionals that Edwards has surrounded himself by. “We have worked hard to find the right people” says Edwards, “traders in Canada and the USA, Monaco and the UK combine their unique skill sets with the quant skill sets of specialist programmers and experts in AI.” Partnerships with ex-Wall Street hedge fund managers specialising in risk controls procedures, highly proficient computer experts with over 20 years of trading experience and well established renowned software trading specialists have all come together to broaden the base of product knowledge and opportunity for investors

to tap in to. Indeed Alternative Asset Management has recently attracted the ex-head of global equities from one of the mainstream global asset managers, who has joined the Company to help with expansion and add gravitas to the ranks of qualified senior management.

Such experience and knowledge is essential. It has recently been reported that some executives and scientists would rather not talk about AI as things have not turned out quite as they may have expected and predicted, but things are changing fast. Modern technology allows supercomputer power on a single lap-top these days and super fast dual processing allows numerous calculations per second that was, up until only a few years ago, thought to be beyond the reach of most. California-based Intel Corp. recently announced that it had developed a chip the size of a thumbnail that can perform a trillion calculations a second. Only ten years ago, such a computational feat would have required perhaps 10,000 processors!

“The promise has always been more than the delivery”, says Brian Hamilton, chief executive officer of Raleigh, North Carolina-based software maker Sageworks Inc., which uses computer formulas to automatically read stock, prices, company earnings and other data and spit out reports for investors.

Hamilton, 43, says today’s AI-style programs can solve specific problems within a given set of parameters. Take chess. Deep Blue, a chess-playing supercomputer developed by International Business Machines Corp., defeated world champion Garry Kasparov in 1997. The rules of chess never change, however. Players have one goal: to capture the opponent’s king. There are only so many moves a player can make, and Deep Blue could evaluate 200 million such positions a second. Financial markets, on the other hand, can be influenced by just about anything, from skirmishes in the Middle East to hurricanes in the Gulf of Mexico. In computer speak, chess is a closed system and the market is an open one. “AI is very effective when there’s a specific solution,” Hamilton says. “The real challenge is where judgment is required, and that’s where AI has largely failed.” *[Source: Bloomberg]*

Edwards believes that by combining the skill sets of vastly experienced and successful traders with the latest developments in AI, he can reach out and take up this challenge. “It is possible to outperform the computers by using judgement and employing human skills to reason and pre-determine market movements based upon a whole set of common emotional indicators that perhaps the machines are not programmed to

compute. However by integrating the two, the results can be very rewarding” Edwards says. “We have pure ‘Black Box’ models that work well and produce superior returns over short, medium and long term time frames, but we also have traders who use purely emotional trading skills performing very well. Perhaps neither system is without fault. The trick is to keep volatility low whilst keeping returns at the top end of expectations.”

To believers of the innovation and development of AI all of this is only the beginning. One day soon we will see super computers that will have dynamic development capabilities that enable them to utilise the same neural network patterns that humans use to sift through and analyse enormous amounts of ‘live’ data. Indeed such research is well under way and being used today. Some of Alternative Asset Management’s partners have already developed systems that have behavioural qualities superior to that of humans insofar as they react in a fraction of the time taken by the human brain, thus enabling them to be pro-active and take advantage of trading opportunities long before manual traders have spotted that an opportunity exists!

Edwards argues that in a world where everyone is trying to reach new heights and before anyone else, it is essential to stay ahead of the curve. “We use so many different indicators to achieve our goals that it is only through super computing technology that we can keep pace with the permutations available to us. From ‘black-box’, contra indicators, volume flow systems, volume spread bars, trend strips, average true range indicators, power move indicators, market profile data, to volume pivot points, volume radar indicators, market momentum indicators and dynamic price stops; these are just the tip of the iceberg in what is being used and constantly developed by our team to develop and enhance our approach to professional money management.”

It will come as no surprise to learn that many quant based professionals use similar tools. “A November 2005 study by Darien, Connecticut-based Casey, Quirk and Associates, an investment management consulting firm, says that from 2001 to ’05, big-cap US stock funds run by quants beat those run by nonquants. The quants posted a median annualized return of 5.6%, while nonquants returned an annualized 4.5%. Both groups beat the Standard & Poor’s 500 Index, which returned an annualized negative 0.5% during that period.” [Source: Bloomberg]

Computers can mine data and see relationships that humans can't. Quantitative investing is on the rise. AI proponents are positioning themselves to become Wall Street's hyperquants.

It wasn't until 1951; however, that British mathematician Alan Turing proposed a test for a machine's capability for thought. In a paper titled "Computing Machinery and Intelligence," Turing, a computer pioneer who'd worked at Bletchley Park, Britain's World War II code-breaking centre, suggested the following:

A human judge engages in a text-only conversation with two parties, one human and the other a machine. If the judge can't reliably tell which is which the machine passes and can be said to possess intelligence. No computer has ever done that. Turing committed suicide in 1954. Two years later, computer scientist John McCarthy coined the phrase *artificial intelligence* to refer to the science of engineering thinking machines.

The Turing Test, as it's now known, has fuelled almost six decades of controversy. Some computer scientists and philosophers say human-like interaction is essential to human-like intelligence. Others say it's not. The debate still shapes AI research and raises questions about whether traders' knowledge, creativity, intuition and appetite for risk can ever be programmed into a computer.

During the 1960s and '70s, AI research yielded a few commercial applications. As Wall Street firms deployed computer-driven program trading in the '80s to automatically execute orders and allow arbitrage between stocks, options and futures, the AI world began to splinter. Researchers broke away into an array of camps, each focusing on specific applications rather than on building HAL-like machines. Some scientists went off to develop computers that could mimic the human retina in its ability to see and recognize botics. Still others set to work on programs that could read and understand human languages.

Financial service companies understandably began to delve into basic machine-learning programs which, over time have now become the 'Masters of the Universe' in-waiting. These programs typically work in reverse to solve problems and learn from mistakes. Like every move a player makes in a game of chess, every trade changes the potential outcome. Machine-learning algorithms are designed to examine possible scenarios at every point along the way, from beginning, to middle, to end, and figure out the best choice at each moment.

For some experts, the markets are the ultimate AI lab. “Reality is the acid test,” with some investment banking firms claiming their computer models help Wall Street firms predict markets and figure out clients’ needs. Since 2002 some models have correctly predicted the stock prices from month to month 61% of the time. Edwards says that whilst this is impressive, he would be disappointed if his AI systems and technology based signals didn’t come in at above 75% efficiency. The question is to what degree his traders can outperform using these signals. “Our traders look for their regular patterns and then use our systems as an overlay to reduce losing trades more than increase winning trades; thus enhancing profits.”

Edwards maintains; “Our fund management style is to bring together all that our traders have learnt from their collective experience of over 160 years and overlay our superior and most advanced AI systems to achieve a unique combination of styles that can be selected by the portfolio managers from time to time.” Edwards believes he achieves ‘alpha’ by “trading the traders”. Such an approach has been expensive to develop. “Patience is a virtue in this business. You need to be patient and must be prepared to invest heavily before you achieve results. Technology is expensive, but the pursuit of excellence is much more expensive!” says Edwards. Indeed it has taken over three years to build towards the launch of the Company’s first fund offering (**The Alternative Vision Fund**) to the ‘Professional Investor’ market this autumn.

Overall Edwards believe the opportunities offered through the adaptation of AI are enormous. “The markets will never be the same again.” For those who don’t embrace the AI phenomena and adapt to the changes that are inevitable, “beware” warns Edwards, “You can’t alter the course of history, but you can influence the future!”

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