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We recently sat down with Fritz Folts, Chief Investment Strategist at 3EDGE Asset Management and spoke with him about Artificial Intelligence and machine learning in the investment management industry. The interview is provided in 5 installments with below being Part 3.

ETF Strategy Summit: What is the dark side of AI?

In the wider world, well beyond the investment management industry, there are going to be a myriad of issues (many of them revolving around ethics) from the development and increasing importance of Artificial Intelligence and machine learning and how it is used in our lives. The late Stephen Hawking went so far as to declare that Artificial General Intelligence, AGI -- "could spell the end of the human race." One example of the potential for serious ethical issues related to AI comes from a recent New Yorker article about how the U.S. military uses weaponized drones to "*take out*" terrorist targets. The military relies upon Artificial Intelligence and metadata to help select these terrorist targets. The data is extracted from an enormous web of intelligence sources, much of it from mobile phone intercepts – including text messages, email, web browsing behavior, location, and patterns of behavior. In the targeting process, known as the *kill chain* – AI and metadata plays a significant role in identifying targets. "We kill people based on metadata," said the former head of the CIA Michael Hayden in 2014. Unfortunately, the fact is that there are certainly stories of "drone strikes," where it turned out that the military through its use of AI seem to have selected the wrong target.

ETF Strategy Summit: What is the humorous side of AI?

One of my favorite stories about *out of control algorithms* comes from a TED Talk by Kevin Slavin, about the growth of algorithmic trading on Wall Street. However, this particular story is actually about the online retailer Amazon. In his talk, Slavin describes how the simple listing of an out of print book for sale on Amazon got a bit out of hand. More importantly it also serves to demonstrate the potential danger of a purely algorithm driven processes where there isn't any human intervention--*no adult supervision*. The story goes that a while ago there was a book listed for sale on Amazon called The Making of a Fly, by Peter Lawrence. At one point, if you wanted to buy the book on Amazon you would have seen it listed for $1.7 million. As Slavin says, the book was out of print, but still. However, if you had bought the book at that price it would have been a bargain because a few days later you would have seen that the price had jumped to $23.6 million, plus shipping and handling. Of course, no one was actually buying or selling any editions of this book. What was happening was evidence of computer algorithms locked in conflict, in a perpetual feedback loop, without any human intervention or oversight. There was no human observing this process who might have been able to step in say, actually $1.7 million for the book is plenty. This is just one rather extreme and somewhat silly example of potential problems that can occur whenever algorithms are in control and where humans are not involved and therefore not able to apply human judgement and common-sense about the real world. Fortunately, this is an example where no one was harmed in the process since no one actually paid millions of dollars to purchase the book, Making of a Fly, by Peter Lawrence, on Amazon.

ETF Strategy Summit: What does AI have to do with investment management and why is it here to stay?

Investing in the global capital markets is at its core a zero-sum game. It involves attempting to predict the future better than one's competitors. In this case, the game involves predicting the future direction of the global capital markets which could include; equities, bonds, real assets – commodities and gold, currencies, etc. Predicting the future is hard, bordering on impossible, and so practitioners seek advantage over their competitors through analyzing data from economic and market history in order to attempt to find the clues from the past that may help them to better understand the potential future direction of markets. As the amount of computing power in the world has expanded exponentially it is now possible for a large swath of market participants to analyze what was once an inconceivable amount of data in search of some competitive advantage through their capacity to better predict the future direction of markets. In such an environment and with so much money at stake it is inevitable that investors will seek competitive advantage through applying AI and machine learning to managing investment portfolios.