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Cognitive Computing Revolutionizes Big Business (…but not Equity Trading)

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Equity trading trails the technological progress made in other industries. Although today's US equity market structure is more complex, nuanced, and competitive than any other asset class, one could argue that the electronic tools offered traders have yet to evolve much in the last ten years. Other than the recent shift from benchmark algorithms to liquidity seeking strategies, equity trading continues to leverage technology strictly for intense number crunching and latency reduction as opposed to higher level decision making now making progress across other big businesses.

You Can Scale a Fish, but You Can't Scale a Trader

In equities, much of the heavy processing "grunt work" is handled by computers, while much of the thinking is dependent on the skills and experience of traders. No doubt, the industry has adapted extremely well to the data consumption challenges it has faced in such a short amount of time. The market has seamlessly evolved from a stock trading manually on one major exchange two decades ago to today's diverse electronic markets where that same symbol can experience thousands of quotes update a second across around 50 different trading venues.

Institutional trading decisions, however, are still largely the domain of humans, who are much harder to scale. This may be why, although 90% of buy side traders have access to electronic trading tools, they only execute one-third of their flow though low touch channels, a plateau they have been stuck at for the last four years. Given the burden still placed on human intuition and intervention, it's also no surprise that Greenwich surveys show that the perceived quality of algorithmic performance is sometimes less important to a buy side trader than the ease of use of a broker's trading strategies.

(To learn more about low touch plateaus and buy side perceptions, read U.S. Equities: The E-Trading Stalemate on Greenwich Associates report)

(Not So) Elementary, My Dear Watson: Cognitive Computing

Outside of equity trading specifically, many industries are adopting technologies which go beyond applying pre-defined rules to big data. Cognitive computing, in particular, is a rapidly growing field which designs systems that mimic human brain processes and the way conclusions are drawn. The goal is to have computers learn from experience and provide

recommendations based on the user's inclinations.

Cognitive computing is already being implemented across diverse industries in a real way. In healthcare, IBM's Watson currently helps doctors make connections between a patient's medical history and recent clinical results, journal articles and best practices guidelines. For service industries, IPsoft offers their virtual "cognitive knowledge worker" named Amelia who interfaces on human terms. Commonly deployed in call centers, Amelia is a virtual agent who understands what people ask – even what they feel – when they call for help.

Cognitive computing has found its way to financial services as well. Digital Reasoning, whose Synthesys system has been deployed in diverse ways such as tracking aliases of spies as well as finding victims of child exploitation, has recently raised $24 million from some big Wall Street banks. Their platform is now being used by compliance teams at UBS and Point72 to search, track and analyze employee's communications and hone in on potential insider trading or impropriety.

Prisoner's Dilemma

Brokers have clearly not kept pace with the technology innovations in other big industries, but they are hardly to blame. Given the number of regulatory changes since the implementation of Reg NMS in 2005, most brokers who initially dedicated the resources to build electronic trading platforms have been buried in compliance tasks which always take top billing in the queue. It's tough to innovate when your capital is funneled back into continual non-revenue producing projects such as system integrity, circuit breakers, and unwanted pilot programs.

Along with the stream of compliance requirements, NMS also sparked an arms race which forced electronic brokers to repeatedly shave milliseconds then microseconds off their internal processing and external routing speeds. Between the regulatory prerequisites and race to near zero, brokers suffer chronic cost fatigue when it comes to finding resources to build client-centric functionality.

Given the confluence of these variables, the core design of trading systems has always centered on a mass deliverable which does not account for any persistence. Algorithms are structured with a common end goal (e.g. benchmark price) and then sprinkled with parameters which give the end user additional controls. These controls allow traders to shift gears but never give them the autonomy to steer in any direction. The strategy doesn't recognize the user, only their aggregate of their clicks and drags. The strategy can make calculated decisions in real time, but those decisions are premediated and based on historical information, not what has been learned specifically about the behaviors of the end user. When the system launches the next day, all is forgotten and the cycle begins again.

The modern institutional equity trader is a prisoner to technology; he or she cannot navigate the high speed markets without it. While execution platforms have certainly become more customizable over the last decade, they are slower in becoming more personal. Where Watson can make suggestions based on one's previous medical history and Synthesys can look for patterns of behavior (albeit illicit), algorithms and their supporting technologies have yet been able to make you a better trader. So, expertise still mainly relies on experience (either the trader's or their sell side coverage's).

(To learn more about the changing role of sales traders in modern markets, read Blurred Lines: Sales Traders Drift Toward Execution Consultancy on Greenwich Associates Access)

There are early signs that change is afoot. Brokers now offer the buy side more comprehensive but uncomplicated visualizations into their strategies. ITG's Prism offers a web-based, real time view into an algorithms decision making process which allows an institutional trader to track an order's plan and any deviations. And vendor innovations are streamlining work flow for brokers. Bloomberg recently launched their Sales & Trading Efficiency Dashboard (DASH) that helps sell side traders cross-reference historical customer trade activity and expressed customer interest with current market activity, news, and trader-specific criteria.

Build a Bridge…and Get Over It

Although science fiction's dystopian fascination with AI builds on the fear that robots will take over the world, we shouldn't worry that our lives (or, more immediately, our jobs) will be threatened by Watson and Amelia anytime soon. For now, we should embrace the transition from the computational era to this exciting, new age of cognitive computing.

Advancements are taking place all around us that encourage a more pragmatic symbiosis between man and computer. Today's equity market is an ideal industry to implement cognitive technologies and marry big data with practical decision making. Once Wall Street is able to dedicate the resources and adjust its focus, the marketplace will reap the benefits as well.

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