AI/ML – An Iterative Learning Process

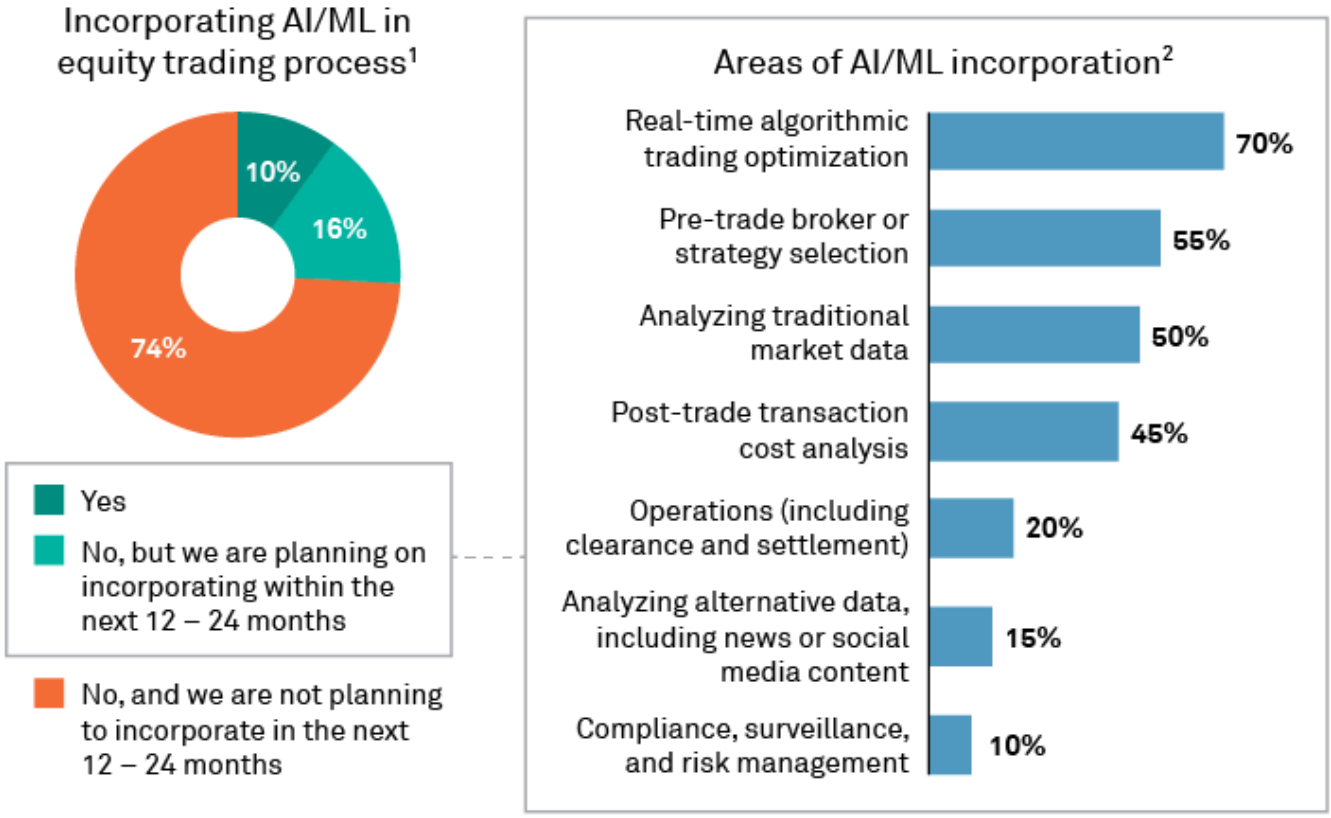
April 30, 2024

With all the hoopla surrounding artificial intelligence and machine learning (AI/ML), is it possible that only 10% of buy-side trading desks are incorporating these technologies in their equity trading processes?

Is this a case of "don't believe the hype" or simply a longer adoption period than expected? Coalition Greenwich research has shown that more than 85% of asset managers have already implemented AI in some capacity for research and idea generation, so we were surprised to find that among the 90 buy-side traders we spoke with across the U.S. and Europe:

- Only 10% are already incorporating AI/ML into their equity trading processes
- 16% are planning on doing so in next year or two
- 74% are not planning on incorporating AI/ML in the next two years

AI/ML Use in Buy-Side Equity Trading



Note: [1]Based on 90 respondents. [2]Based on 20 respondents.
Source: Coalition Greenwich Voice of Client – 2023 Market Structure and Trading Technology Study

Our first reaction to the results was disbelief. How could almost three-quarters of equity traders not be

planning to incorporate it? Maybe the responding traders didn't know (or want to admit?) that their quant and data science teams are already moving forward?

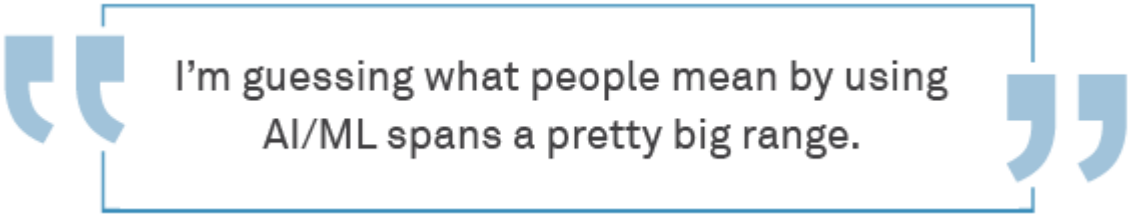
Looking deeper into the data, of that 26% already incorporating AI/ML or planning to do so in next 12–24 months, the top three areas of AI/ML incorporation are:

- 70% for real-time algo trading optimization
- 55% for pre-trade broker or strategy selection
- 50% for analyzing traditional market data

So, What's Really Going on Here?

As we noted in a recent study, AI, and especially ML, are often misunderstood. In many cases, rules-based programming and other types of models are responsible for analytical and predictive outcomes, which is not true for AI/ML. As a result, some respondents might have misperceptions, and the percentage of early adopters or those with plans to adopt may be even lower. In fact, a head of workflow technology went as far as saying, "I don't think that more than 20% [of traders] understand what they mean when they claim to be using AI or ML."

To help shed light on this dilemma, we spoke with several leading minds at asset managers, brokers and fintech providers.



One astute quantitative trading analyst noted, "I think there is some trepidation in the industry about calling anything AI, given the SEC's proposals around data analytics and the October executive order on AI. It's kind of scary, we don't know what the scope will be." They added that while the AI order was written with a focus on retail trading, institutions don't yet know if it will apply to them. "The SEC has a closed-door policy; they're not taking meetings on this. Are they actually reading comment letters?" they wondered.

A quant researcher/trading head guesses the 74% who are not planning on incorporating AI/ML are interpreting the question to refer to specific tools like ChatGPT, which they find "problematic to use" (non-disclosure of code, inaccuracy and unaccountability in results, etc.). However, they note that "There is no clean mathematical or scientific separation between the approaches behind large language models and more run-of-the-mill ML. Nor is there any shortage of low-hanging fruit where basic ML done well can yield better results."

While we were not surprised that real-time algo trading optimization is a top area of AI/ML incorporation, one sell-side quantitative head we spoke with suggested there may be an element of response bias at play. People are inclined to improve tasks and functions they are responsible for over others they are not. Almost

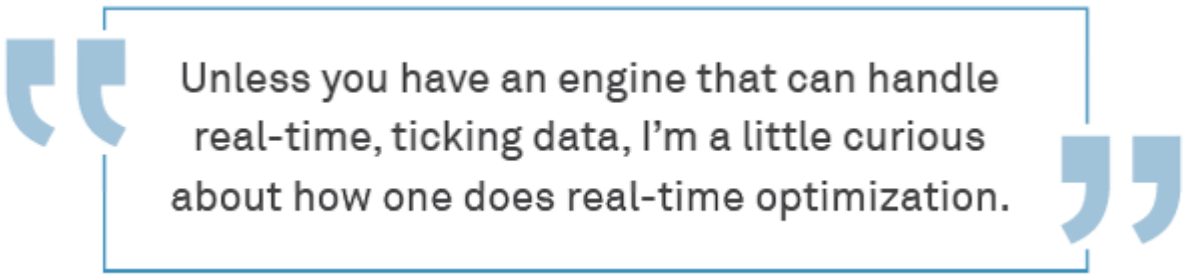
75% of this study's participants were head traders, who are generally most focused on trade execution. The more tech-savvy heads may also be indicating where they think the inherent noise is in the process, or the unwanted behavior and random or irrelevant variations or errors in the data that makes it more suitable for ML applications.

"A lot of effort goes into managing the noise," a buy-side systematic trading head observed. The same trading analyst was surprised that real-time algo optimization ranked so high, noting that some uses of ML in this area are more expensive than others from a data perspective. "Unless you have an engine that can handle real-time, ticking data, I'm a little curious about how one does real-time optimization," they added.

Another head of systematic trading also expected even lower overall usage than we found. For example, they wonder how many managers who claim to incorporate AI/ML into their real-time algo trading optimization are talking about using sell-side algorithmic strategies that leverage elements such as volume forecasting, limit order placement models and other features. In this case, managers could say they are using AI/ML in their trading process, but it is really the sell side that is doing the heavy lifting of incorporation.

Using Sell-Side and Fintech Provider Tools

This is an important distinction—much of what the buy side is leveraging at this point is probably provided by the sell side or a vendor, not proprietarily built in-house. "It's not necessarily wrong," the systematic trading head added, but could use "an added layer of nuance" around what it means to make use of such advanced technologies. Several others shared this notion.



One workflow solutions specialist was also curious if the respondents were including their use of broker or fintech vendor-derived models. "I'd think most of the Street could answer "yes" to this question if the models aren't built in house," they noted. Another thinks the traders may be claiming incorporation based on the pervasiveness of AI/ML claims made by their technology platform providers, for example in pre- or post-trade risk evaluation. "I suspect the true usage and tangible benefits are a small fraction of what's reported."

Others suggested perhaps some claims of AI/ML use in trade optimization are a bit "embellished" or "exaggerated." For example, is simply clustering (classifying) stocks that share similar characteristics "using AI/ML in trading"? Technically it is, although several people felt that designation is best reserved for tasks like real-time decision-making. "What people mean by using AI/ML spans a pretty big range," one person added.

The quant researcher we spoke with shared that sentiment, suggesting we be more specific in our questions. "AI/ML" has become a blanket term for an extensive mix of technologies, from basic automation tools like

algo wheels to large language models like ChatGPT. “I would have to know how people interpreted this question for these answers to mean anything,” they noted.

So Where Does that Leave Us?

For starters, perhaps we’ll revisit how we’ll pose such questions in future outreach. We’ll ask about AI and ML separately as the distinct technologies they represent. It’s clear that we should further distinguish between proprietary AI and ML models versus those leveraged via third parties, such as brokers and fintech providers. While one is not inherently better than the other, there’s a difference in how they are used. Besides, as our recent research has shown, many managers are now taking a hybrid “buy, build and integrate” approach to technology solutions.

For now, we’ll take this feedback constructively. ML is an iterative process that involves gathering and analyzing data to tune a model and make systematic improvements. Maybe we can take that same mindset and learn something not by iteratively asking the machines, but by iteratively asking about them.

Jesse Forster is the author of this publication.

---

www.greenwich.com | ContactUs@greenwich.com

Coalition Greenwich, a division of CRISIL, an S&P Global Company, is a leading global provider of strategic benchmarking, analytics and insights to the financial services industry.

We specialize in providing unique, high-value and actionable information to help our clients improve their business performance.

Our suite of analytics and insights encompass all key performance metrics and drivers: market share, revenue performance, client relationship share and quality, operational excellence, return on equity, behavioral drivers, and industry evolution.

About CRISIL

CRISIL is a leading, agile and innovative global analytics company driven by its mission of making markets function better. It is majority owned by S&P Global Inc., a leading provider of transparent and independent ratings, benchmarks, analytics, and data to the capital and commodity markets worldwide.

CRISIL is India’s foremost provider of ratings, data, research, analytics, and solutions with a strong record of growth, culture of innovation, and global footprint.

It has delivered independent opinions, actionable insights and efficient solutions to over 100,000 customers through businesses that operate from India, the U.S., the U.K., Argentina, Poland, China, Hong Kong, and Singapore.

For more information, visit www.crisil.com

Disclaimer and Copyright

This Document is prepared by Crisil Coalition Greenwich, which is a part of Crisil Ltd, a company of S&P Global. All rights reserved. This Document may contain analysis of commercial data relating to revenues, productivity and headcount of financial services organisations (together with any other commercial information set out in the Document). The Document may also include statements, estimates and projections with respect to the anticipated future performance of certain companies and as to the market for those companies' products and services.

The Document does not constitute (or purport to constitute) an accurate or complete representation of past or future activities of the businesses or companies considered in it but rather is designed to only highlight the trends. This Document is not (and does not purport to be) a comprehensive Document on the financial state of any business or company. The Document represents the views of Crisil Coalition Greenwich as on the date of the Document and Crisil Coalition Greenwich has no obligation to update or change it in the light of new or additional information or changed circumstances after submission of the Document.

This Document is not (and does not purport to be) a credit assessment or investment advice and should not form basis of any lending, investment or credit decision. This Document does not constitute nor form part of an offer or invitation to subscribe for, underwrite or purchase securities in any company. Nor should this Document, or any part of it, form the basis to be relied upon in any way in connection with any contract relating to any securities. The Document is not an investment analysis or research and is not subject to regulatory or legal obligations on the production of, or content of, investment analysis or research.

The data contained in the Document is based upon a particular bank's scope, which reflects a bank's data submission, business structure, and sales revenue Reporting methodology. As a result, any data contained in the Document may not be directly comparable to data presented to another bank. For franchise benchmarking, Crisil Coalition Greenwich has implemented equal ranking logic on aggregate results i.e., when sales revenues are within 5% of at least one competitor ahead, a tie is shown and designated by = (where actual ranks are shown). Entity level data has no equal ranking logic implemented and therefore, on occasion, the differences between rank bands can be very close mathematically.

The data in this Document may reflect the views reported to Crisil Coalition Greenwich by the research participants. Interviewees may be asked about their use of and demand for financial products and services and about investment practices in relevant financial markets. Crisil Coalition Greenwich compiles the data received, conducts statistical analysis and reviews for presentation purposes to produce the final results.

THE DOCUMENT IS COMPILED FROM SOURCES CRISIL COALITION GREENWICH BELIEVES TO BE RELIABLE. CRISIL COALITION GREENWICH DISCLAIMS ALL REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED, WITH RESPECT TO THIS DOCUMENT, INCLUDING AS TO THE VALIDITY, ACCURACY, REASONABLENESS OR COMPLETENESS OF THE INFORMATION, STATEMENTS, ASSESSMENTS, ESTIMATES AND PROJECTIONS, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARISING OUT OF THE USE OF ALL OR ANY OF THIS DOCUMENT. CRISIL COALITION GREENWICH ACCEPTS NO LIABILITY WHATSOEVER FOR ANY DIRECT, INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE OF ANY KIND ARISING OUT OF THE USE OF ALL OR ANY OF THIS DOCUMENT.

Crisil Coalition Greenwich is a part of Crisil Ltd., a company of S&P Global. ©2026 Crisil Ltd. All rights

reserved.