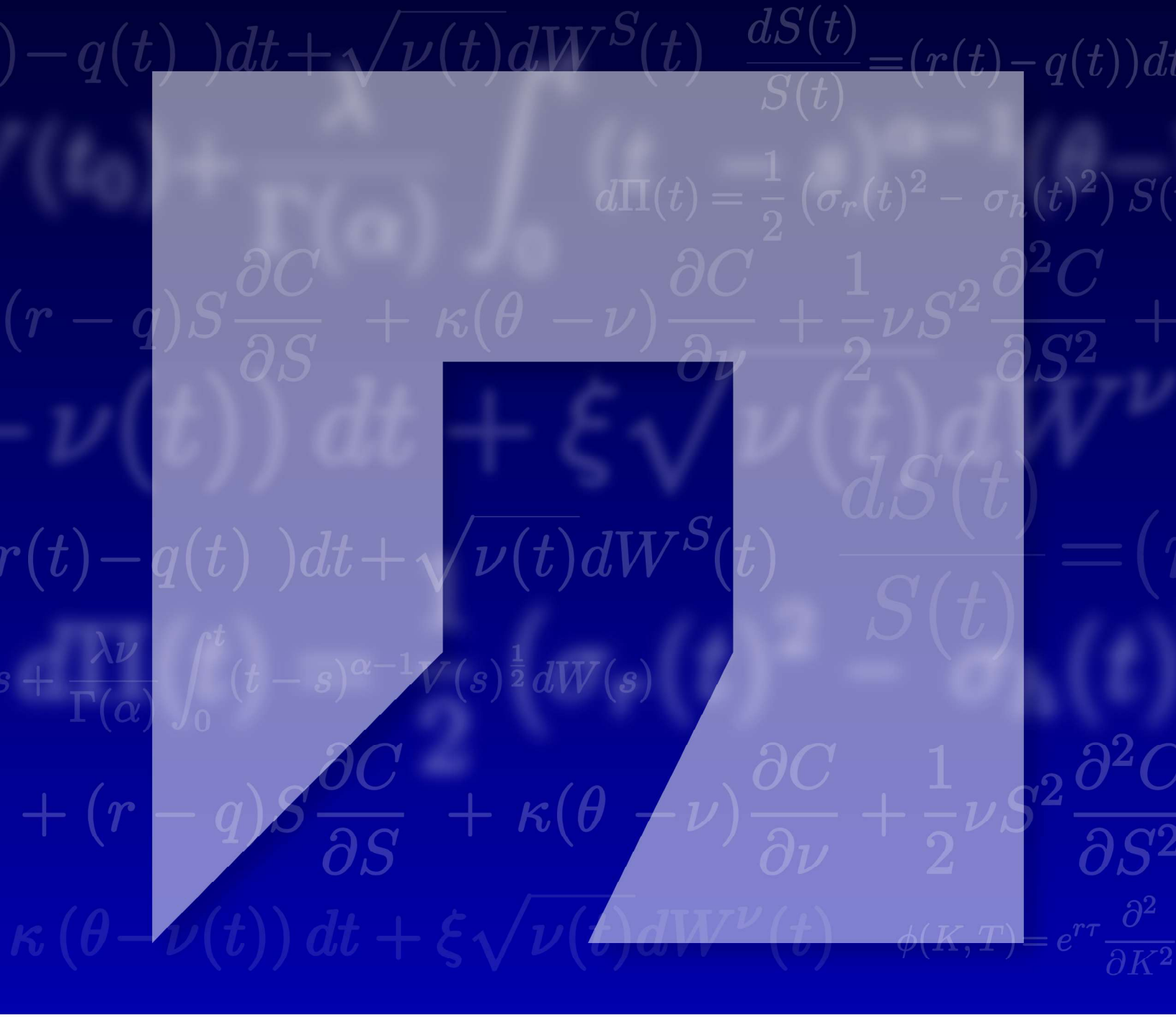

The current landscape of electronic trading: A discussion among experts

numerix

When numbers matter

The model for financial trading has slowly but surely shifted over the last decade. We have seen an uptick in electronic trading across a broad range of asset classes—indicating a thus far gradual transition from the traditional voice trading or traders/brokers calling and signaling across large open pits or broker dealing rooms. This growth in e-trading is linked primarily to technology advancements that provide increasing operational efficiency throughout the entire trade lifecycle as well as snowballing regulations that hurl tougher standards on transparency, execution and reporting.

During a Numerix webinar held on April 30, 2019, a panel of market experts, including Martin Toyer, Chief Technology Officer of Numerix, Scott Fitzpatrick, CEO of Tradition SEF, Joseph Ahearn, Senior Vice President, Head of Fixed Income, TradingScreen, and, serving as moderator, Kevin McPartland, Managing Director, Market Structure and Technology, Greenwich Associates, discussed the key trends, challenges and issues that are shaping the evolution of electronic trading across the capital markets. Below we share the views and perspectives provided in their discussion.

FROM VOICE TO ELECTRONIFICATION . . .

Kevin McPartland: Much of the talk around electronic trading tends to gravitate towards more vanilla products, such as bonds, U.S. Treasuries, and equities, but you are all very much focused on derivatives. What are you seeing in terms of the voice world starting to insert technology into that space?

Scott Fitzpatrick: The more complex markets are still very much voice driven and will probably stay that way. However, what we are beginning to see is a greater supply of information being provided on screen for the more vanilla products, such as interest rate swaps, and I do think that as technology continues to get introduced into the trading process and as the provision of liquidity on electronic platforms starts to advance to a higher level, then it follows that we should see a shift in more and more OTC derivative products moving toward electronic trading venues.

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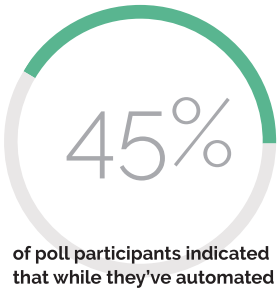
– Scott Fitzpatrick, Tradition

Joseph Ahearn: In the fixed income derivatives world, which is the space I'm in, electronification continues to emerge with each new technological breakthrough, particularly as traders start to see the benefits of optimized workflow, the ability to interact with greater and more valuable liquidity, and being able to provide better execution for clients.

Martin Toyer: As the benefits of processing complex trades through technology systems becomes increasingly realized, then there will be more of it and we will also see better and more capable technology get introduced into the market. One way to look at it is the front office is starting to use computers for what people are not good at, such as depending on memory to conduct every element of a trade, capturing RFQs from counterparties, collating data—items that are historically in the trader's head. That doesn't scale well, but with computers it does. But I also want to point out that the technology we already have today is very capable and quite outstanding.

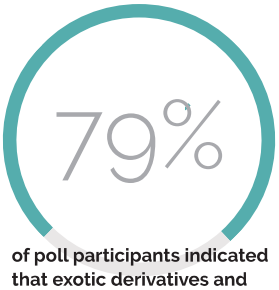
The responses to a poll we conducted during a recent Numerix webinar titled "Transformational Trends in Electronic Trading: Adapting to Change and Seizing Opportunity" highlighted three key themes within the current landscape of electronic trading in the capital markets.



of poll participants indicated that while they've automated their equities and most of their fixed income trading functions, they still go manual for OTC and structured products.

"This is not a very surprising result, but it is my belief that to compete effectively and win in today's derivatives markets, it is more and more requiring a technological escalation for market participants."

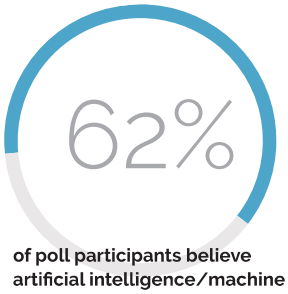
— Martin Toyer



of poll participants indicated that exotic derivatives and structured products are the most challenging instruments to e-trade.

"We expected this to be the case, but I think that as more people realize the benefits of e-trading, it will eclipse the challenges associated with it for the more complex asset classes."

— Martin Toyer



of poll participants believe artificial intelligence/machine learning will play a key role in e-trading going forward as it applies to smart algorithms and risk management. However, 29% indicated that it's too early to speculate the role AI/machine learning may play, or that it's overhyped.

"In my view, the new tool we have now in e-trading is data science, which is enabling powerful analysis for traders. AI or machine learning is not happening yet, but most likely it is inevitable."

— Martin Toyer

BARRIERS TO E-TRADING . . .

McPartland: We have seen significant growth in e-trading and Dodd-Frank and MiFID II brought on a lot of that growth. But there seems to be places where it could grow faster or maybe hasn't even started to grow. What's slowing things down? Is the technology not quite there yet? Is it a cultural/people problem? Is it regulatory related? Or a little bit of all of the above?

Toyer: I am amazed that electronic trading has not picked up as quickly I thought it would, but I don't think it's the technology that is holding back more e-trading. The technology has been there a decade or longer. For example, we've been able to e-trade swaps for over 15 years. But there are whole pockets of asset classes not being traded electronically and I think much of this has to do with issues related to the return on investment. It takes a significant amount of investment to move a trading desk to e-trading.

Also, in markets that are still mostly voice based, there is not a clear first mover advantage to go electronic, and if you are a leader in a particular space, why change? However, in the areas where automation exists, there are enormous benefits happening, and I believe when those benefits are viewed as being relevant to a certain space, firms will take the leap. But again, it's about being convinced on the return on investment.

Fitzpatrick: I don't think technology is the issue. While we could perhaps use a little bit of improvement in areas such as post-trade processing and regulatory reporting, the technology capabilities we have today are not an inhibitor to e-trading across markets, irrespective of whether we are talking about vanilla or complex products. I think the primary inhibitor is the high investment needed to build out the connectivity and infrastructure required to support price provision and e-trading from front-to-back.

As a builder and operator of platforms, we are very conscious of the fact that it can be an expensive mistake if you make the investment in an electronic platform and it fails. Also, a client base may not be quite ready to take risk in electronic form as market participants may not want to show their hand on an electronic screen where bids and offers are expected to be firm and executable.

Another issue that may inhibit movement to electronic trading, particularly in product areas like repos, is the legal construct required to make trading possible. There are strict legal structures that need to be placed in some products before those markets can function effectively in electronic form. Simplification, possibly through standardization of contracts in some products, would certainly help.

"I am amazed that electronic trading has not picked up as quickly I thought it would, but I don't think it's the technology that is holding back more e-trading."

– Martin Toyer, Numerix

Ahearn: From another perspective, I think there are two issues holding back e-trading adoption, in the fixed income market at least. One is that OMS platforms have not allowed their customers to use an EMS of choice, and the other is the lack of electronic trading agreements between market participants.

THE HUMAN AND TECHNOLOGY BALANCE . . .

McPartland: Another big part of this must be human nature, in the sense that people still want to talk to people. What are you seeing in terms of the human element vis-a-vis the electronic one?

Fitzpatrick: In a lot of product areas we are experiencing a sort of crossover moment. The interest rate swap market is an excellent example of this, whereby price discovery is starting to come in through electronic contribution from market makers, but trade "size" discovery still very much happens in the voice component or work-up process of these markets. For example, you may see a $25 million trade on the screen, and once the price for that initial trade has been agreed on and traded on-screen, that's when the voice component kicks in and you see extensive additional trading at that price. You can easily and regularly see $500M+ of additional notional trades at that price in the work-up sessions after the initial $25M trade. But, as I say, that part all happens through the voice desk. I hope I have illustrated how, at the moment in markets like rates, we are in that middle ground of transitioning from what was a pure voice market into an electronic market, but you can't accomplish it in one leap—you need a transitional process like the hybrid market we have now.

Ahearn: While the technology can be used to make interactions easier and more efficient, the efficiencies alone will not be enough to move the needle to e-trading in some markets right now. Market participants are already putting up with a lot of inefficient workflows, and

so it's really about the comfort of having people on the other end of the protocol who you can trust and who will be there for the trade.

ROLE OF DATA IN THE TRADING FUNCTION . . .

McPartland: Let's talk about an item that is very related to automation and e-trading, and that is the need for good data. You can't price things and you can't provide liquidity if you don't have good underlying data. There is certainly more data than there used to be. What are your views of data within the trading function?

"While technology can be used to make interactions easier and more efficient, the efficiencies alone will not be enough to move the needle to e-trading in some markets right now."

– Joseph Ahearn, TradingScreen

Toyer: Data is a fuel and the pipe is wide. There is a lot of data coming through and there's almost too much of it. There is this drive towards transparency and so a tremendous amount of data is available and much of it is available soon after it is produced. I think one of the challenges everyone has is that data comes through in different places, formats and with different identifiers. So there is a massive challenge to collate data, to transform data, to combine data, and to get to turn that into something valuable.

Fitzpatrick: There are numerous data driven initiatives going on in the markets right now and high-quality data is critical to being able to determine the best price and to execute against the best price, as well as to best manage your mark-to-market and regulatory risk profiles. There is a lot of good data out there, and there is certainly more available than has been in the past, but there is also a data overload and, in some cases, bizarrely too much of it. The key is to sift through everything that is out there and assess where the true value is and how you want to use it. One thing is sure, and we have seen it through the modernization of ISDAFIX via ICE Swap Rate, is that liquidity from electronic trading platforms arguably provides a better, more consistent quality of data for the purpose of benchmarking and fixing mechanisms. You could argue that is one positive we have seen in the shift to electronic venues as a result of regulatory change.

Ahearn: Data is coming increasingly into focus because we are now actually learning how to work with it and optimize our use of it. Conceptualizing the data throughout the trading workflow is the key. As an example, fixed income TCA (transaction cost analysis) has morphed from a traditional post-trade process to an actual pre-trade process. By synchronizing the IOIs (indicators of interest), the trading prices, the RFQs and the competitive quotes, a whole new world opens up to best execution, best selection, and a better understanding of where to find liquidity.

A CHANGING COMPETITIVE ENVIRONMENT . . .

McPartland: I want to pivot to the competitive landscape, which has certainly changed. If we look back, it used to be very straightforward. There were dealers and there were investors and that was pretty much it. Things are very different now. There is a lot of gray area between the banks, the buy side, and prop trading firms. Can you talk a bit about how roles are changing in today's unique ecosystem?

Fitzpatrick: The wholesale market, where typically it is banks trading in large sizes in varying degrees of illiquid products, is still very much dominated by the 20 to 25 largest banks in the world. But in the non-wholesale market, we have seen the introduction of non-traditional contributors to liquidity pools, that is, non-banks in the form of buy-side participants. So whereas we have seen a shift in terms of new participation from a liquidity provision standpoint, it has not been a seismic shift by any stretch of the imagination, partly because of some of the regulatory hurdles to get to the point of being a market-maker are considerable and expensive.

Toyer: The top 20/25 banks are beginning to pull away from some of the areas where they have traditionally dominated, and that has left the non-traditional contributors, such as the buy side, as well as some regional banks, with the opportunity to step in and start to work out an enhanced identity for themselves and become leaders in new areas.

"The new tool we have now in e-trading is data science. AI or machine learning is not happening yet."

– Martin Toyer, Numerix

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING . . .

McPartland: One topic that has been catching a lot of buzz over the last year or so is artificial intelligence and machine learning. Is there real artificial intelligence and machine learning being used in the derivatives market?

Toyer: In my view, it is not really machine learning or artificial intelligence. It's data science, and there is certainly a fair amount of it happening in various ways. Data science is being used to understand the best price, the best approach on auto quoting and when to autoquote or not to autoquote, and for understanding relationships, and other factors. I'm not sure if AI or machine learning is just yet going to happen.

Ahearn: I would say no, not really being used. The AI process perhaps is being nudged in the sense of taking post trade analytic data and feeding it back into the pre-trade world, but that's not exactly a neural network.

Fitzpatrick: It's really data science that's being used. We are capturing pre- and post-trade information and using it for analysis. That's not at the AI level or close to it.

Access the full discussion, "Transformational Trends in Electronic Trading: Adapting to Change and Seizing Opportunity," here.

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