

**FIX** TRADING  
COMMUNITY™  
INDUSTRY-DRIVEN • INDEPENDENT • NEUTRAL

# EMEA Trading Conference

23<sup>rd</sup> June 2021

Pre-Event Magazine

[REGISTER HERE](#)

**FIX** EMEA  
TRADING  
CONFERENCE   
FOR THE INDUSTRY BY THE INDUSTRY – INNOVATING TOGETHER

# FOREWORD

## BY LEE SABA AND RICH EVANS – GLOBAL STEERING CO-CHAIRS OF THE FIX TRADING COMMUNITY

Welcome to the 2021 EMEA Trading Conference.

It has been a long 18 months since we sadly had to cancel the live conference in March 2020 due to the global pandemic, but we are delighted that the FIX Trading Community has not let this impact on our continued efforts to drive effective standards in the electronic trading world. The postponed conference held in September last year in a fully virtual format, saw over 1,000 attendees join over the day, 70+ speakers and 28 sponsors - we thank everyone for their participation and support helping to make it such a successful event.

This is also a good opportunity for us to thank our members for their ongoing support. FIX cannot survive without the membership contributing to the continued development and protection of the Protocol that is so central to the success our day jobs. We would also like to thank our member volunteers that provide so much time and expertise in ensuring the FIX family of standards remain relevant in an ever-changing market. And for those of you reading this who are not members – we have just one question for you – why not? Being part of the FIX Trading Community is not only the right thing to do, but provides so many other benefits of being able to share and learn from your peers and clients. If you would like to find more about becoming a member, please contact us on [fix@fixtrading.org](mailto:fix@fixtrading.org).

Alongside continuing to run global events amongst the pandemic, the FIX Trading Community is undergoing a significant transformation. As a membership organisation, we are always cognisant of providing value for money for our members and have made the decision to move the Program Office activities in house. To this end, at the end of June 2021, Jordan & Jordan will be handing over the reins to the FIX staff. We would like to thank Jordan & Jordan for their excellent management of the Program Office for the past 18 years, with special thanks to Courtney McGuinn, Kathleen Callahan and Tom Jordan for their significant contributions over that time. However, we do not expect to say goodbye to Jordan & Jordan, as they remain valued members of the FIX Trading Community.

We are excited that once again we are able to bring you the 2021 EMEA Trading Conference in a virtual format. We do hope you enjoy it and that we will hopefully see you all in person at the next EMEA Trading Conference in March 2022.



**Lee Saba**  
Global Steering Co-Chair  
FIX Trading Community



**Rich Evans**  
Global Steering Co-Chair  
FIX Trading Community

# EDITORIAL

BY MATTHEW COUPE AND REBECCA HEALEY – EMEA REGIONAL  
COMMITTEE CO-CHAIRS OF THE FIX TRADING COMMUNITY

Welcome to you all once again to our pre-event magazine. It seems such a shame that we can't meet in person again this year, but as the EMEA region drives through with a monumental vaccination program, we hope we can be together next March, two full years after postponing the live event in 2020.



**Rebecca Healey**  
EMEA Co-Chair  
FIX Trading Community

It is 9 months since we last joined the community from a TV studio at The Science Museum and again this year we will be hosting the conference live from a studio in London. It has been a busy year, with a lot of progress within the FIX Trading Community, so it seems that now is a good time for us to come back together and review the past 9 months and look forward to the second half of this extraordinary year.

We have all learnt a lot this year whilst working from home, and there are a lot of buzzwords flying around as to what the new normal will look like, and how firms will adapt. Will what appears to be a commonly discussed hybrid model of 3 days in the office, 2 days at home actually work in practice? Will it result in meetings being jammed into 3 days such that efficiency starts to suffer? How will it impact travelling – will a week-long business trip have to be condensed into 3 days because there is no one in the office on Mondays and Fridays? This year we will be kicking off the conference day by looking at these issues, with insights from recent studies reviewing how our industry has fared the pandemic and what the week will look like once the return to office starts to pick up pace.



**Matthew Coupe**  
EMEA Co-Chair  
FIX Trading Community

Also, this year within the EMEA region we have been fortunate to work closely with our local EU and UK regulators. With them, we have explored how the FIX Trading Community can support the regulatory process by providing unique access to the subject matter experts working within our membership, who truly understand the minute detail of the regulations.

Regulation continues to change at a significant pace as the regulatory community continue to strive for improvements in the operation of the financial markets. We are delighted to welcome a panel of representatives of regulators from across the globe, including UK the EU and Australia, all of whom will be discussing the issues that challenge them daily – with special reference to the regulatory challenges of the working from home model and the global cooperation between regulators to ensure regulatory harmony.

We will also be looking at the hot topics around Equities and Fixed Income trading and the innovations we are seeing in those markets, along with the daily challenges that banks, technology providers and market operators face in their ability to do business and meet their fundamental responsibilities to their clients.

Chairing the FIX Trading Community in the EMEA region continues to be a privilege - we would like to thank all our participants for their continued support and hard work, and to our sponsors who make our events possible where we have the luxury of being able to focus on the real issues that our industry needs to hear and debate, as opposed to having to make the event a commercial success by having an agenda led by commercial interests. We also need to thank our Trade Association partners, for their help in steering the agenda and their support with the development of the Protocol.

Finally, we would like to thank everyone engaged in the FIX EMEA region. The FIX Trading Community simply can not operate and thrive without the continued support of the membership. Firms and professionals involved in electronic trading should be a member contributing to the running and the safeguarding of the Protocol/global standards, but also joining in the development and enhancement of our industry.

So please get involved with the working groups and committees – if you need more information on working groups or would like to discuss how your firm can get more involved, please don't hesitate to contact the FIX Program Office at [fix@fixtrading.org](mailto:fix@fixtrading.org).

We do hope you enjoy this magazine and we thank all the contributors for their insightful articles, which I hope you will find both interesting and informative.

[REGISTER HERE](#)

[VIEW AGENDA HERE](#)

# CONTENTS

- 6** DISCOVER THE UPCOMING EVENTS IN 2021
- 7** THE VALUE OF UNDERSTANDING YOUR TECHNOLOGY ASSETS - EXACTPRO
- 9** BEYOND HIGH-TOUCH VS. LOW-TOUCH: FIT-FOR-THE-FUTURE TECHNOLOGY - ITIVITI
- 11** ETF TRADING: NEW TRADING TOOLS HAVE EMERGED, ACCELERATING THE GROWTH OF ON-EXCHANGE EXECUTION - LSEG
- 13** FX AGENCY COST ESTIMATOR SETTING FX ALGO TRADE HORIZONS? IT'S IN THE ANALYTICS - VIRTU
- 15** RETAIL FLOW: CAN FREE TRADING BE MORE ADVANTAGEOUS THAN BEST EXECUTION? - EURONEXT
- 17** HOW TO EFFECTIVELY TRADE AT LOW PARTICIPATION RATES WHILE UTILISING DARK BLOCK LIQUIDITY - LIQUIDNET
- 19** YOUR BEST WAVE IS STILL OUT THERE - SIX
- 22** UNDERSTANDING THE LIQUIDITY LANDSCAPE IN EUROPE - AFME
- 23** ADAPTABILITY IN THE FACE OF UNCERTAINTY - THE IA
- 25** SPONSOR DIRECTORY

# DISCOVER THE UPCOMING EVENTS IN 2021

**15**

**July**  
THURSDAY

**Evolution of OMS/EMS for Equities**  
Online Live Webinar

[REGISTER HERE](#)

**02**

**September**  
THURSDAY

**19th Asia Pacific Trading Summit**  
Hong Kong

[REGISTER HERE](#)

**07**

**October**  
THURSDAY

**Japan Electronic Trading Conference**  
Online Virtual Conference

[CLICK HERE](#)

**28**

**October**  
THURSDAY

**Singapore FIX Conference**  
Singapore

[CLICK HERE](#)

**18**

**November**  
THURSDAY

**Australia FIX Conference**  
Sydney

[CLICK HERE](#)

**18**

**November**  
THURSDAY

**Nordic Trading Briefing**  
Stockholm

[CLICK HERE](#)

To view a list of all upcoming FIX events, please

[CLICK HERE](#)

# THE VALUE OF UNDERSTANDING YOUR TECHNOLOGY ASSETS

“Never invest in a business you cannot understand,” – the famous quote attributed to Warren Buffett also holds true for fintech innovation and may suggest that lack of knowledge about your technology assets can put your digital transformation budgets at substantial risk.

The healthy way to own an asset is to know what is inside and what governs it. If this is the case, you will be able to put this asset to work and get returns on your investment.

Imagine you decide to renovate your own home. This may play out as a nice demonstration of your craft skills and, at the same time, help you save on costs. However, if you choose to pour your creativity onto the walls without knowing where exactly the electrical wiring runs, the outcome of hammering a nail into the wire is likely to spoil both perceived benefits.

Similarly, the feasibility of investing in a technology transformation project depends on the depth of your understanding of the platform in question.

## *The financial benefits of knowing what you own*

Consider two examples.

The first example is around large-scale technology migration within a market infrastructure being handed over to a new parent entity. The current technology is thoroughly tested, its functionality is exhaustively modelled through an end-to-end regression test library equipped with automated execution capabilities. What is more, the team has extensive knowledge of the technology platform, as well as an understanding of its correct and incorrect behavior. The migration is planned with this knowledge in mind.

The second example features a financial institution who started their technology replacement efforts by engaging a third party to create a requirements specification for a new system based on the organization’s business need and then asking them to develop one. The resulting system, though impeccable from the functional specification point of view, however, turns out to be unable to function through multiple interfaces connecting it to the surrounding infrastructure components. In this case, the organization has only a few people familiar with the original system from performing superficial manual tests against it.

Given the two situations, it will not come as a surprise that the first project proved to be a much better investment than the second one, which achieved the only transformational goal of turning an impressive budget into a waste of time and human effort.

Let us try to understand what is involved in “knowing what you own”.

## *Understanding: the process of knowledge acquisition*

What is knowledge from an epistemological point of view? Knowledge is different from just an opinion in that it requires evidence to support it. In other words, the process of understanding deals with building a model of reality and subsequent assessment of this model against the reality itself.

Any technology platform is a fragment of the world designed to perform specific meaningful functions. To understand how it works means to build its model and challenge it.

From the knowledge acquisition perspective, this approach is implemented through rigorous testing as opposed to a box-checking exercise, which in the financial technology world is a very common activity accompanying regulatory reporting tasks.



**By Mikhail Kurkov,**  
Head of the European Markets Division, Exactpro

The main difference between the two lies in the mindset: to get a good understanding of the system under test we need to challenge our assumptions about it rather than try to prove that they simply comply with the requirements and stakeholders' expectations.

#### *Models: reflecting the reality*

An important point about understanding is that it is a process rather than a static snapshot of current reality.

To make this process effective, mere mind power is not enough – it is important to support knowledge acquisition with tools. The deeper the needed degree of confidence in the system under test is, the more complexity would be required from the tool that we use to assess it.

A tool that is fit to the task is essentially a model of the system under test, which rivals it in terms of complexity and degrees of freedom. Such a tool is capable of modelling all of its possible interactions, both internal and external, and capturing the data flow. Analysis of this data can be leveraged for the model improvement.

#### *Test oracles vs. human judgement*

As any technology project evolves, the accompanying testing activities result in building a comprehensive model of the system under test in the form of a large regression testing library. This is a valuable artifact per se, as it significantly improves our knowledge acquisition capabilities.

However, if not subjected to constant improvement, such a model will inevitably decline, losing the ability to serve its main purpose – to drive the evolution of what we know about our technology platform.

**“...the feasibility of investing in a technology transformation project depends on the depth of your understanding of the platform in question.”**

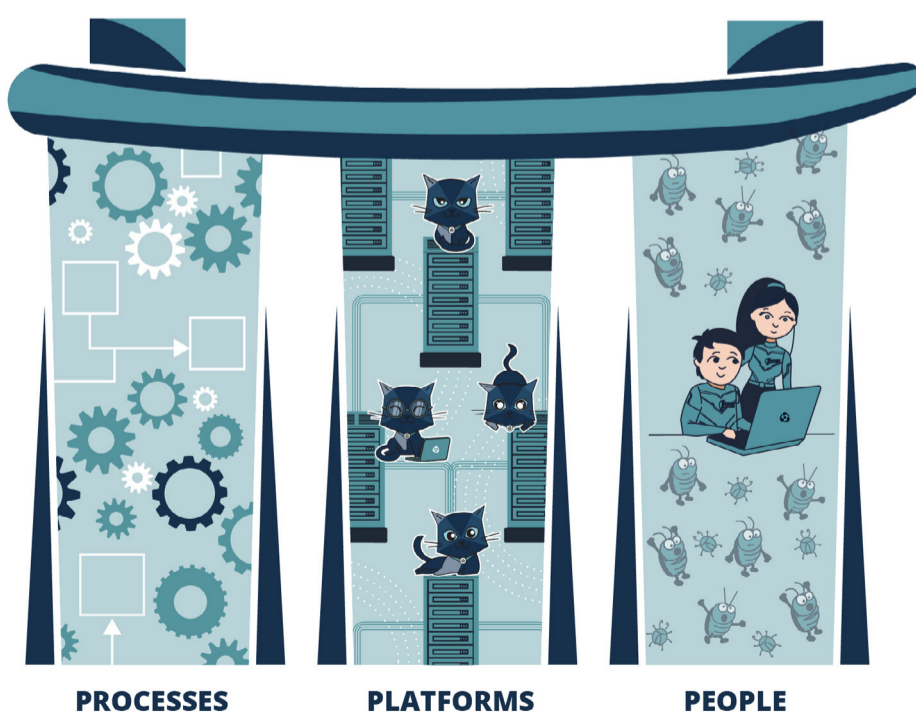
According to common understanding, the ability to tell right from wrong, correct from incorrect is considered to be the essence of the test oracle concept. However, when this reasoning capability is cast in stone (i.e., built into a finalized test library) it means that we are delegating our judgement functions to the machine.

An alternative view on the test oracle suggests that its purpose is to serve as an alert mechanism prompting humans to intervene rather than taking over their decision-making responsibility. This perspective is in line with the principle of constant model evolution: to ensure it, we need the people component to be a part of the equation. Moreover, knowledge by its essence is a social concept, so the understanding of the system under test cannot evolve without humans: people act as a collective distributed database used to shape judgements about reality.

To be justified in terms of time/money investment, any transformational initiative needs to be assessed in terms of understanding of one's own technology assets. The knowledge about them rests on three pillars – processes, platforms and people, with all three being part of any rigorous software testing approach.

Invest in software testing. Build a more resilient future.

## UNDERSTANDING YOUR TECHNOLOGY ASSETS





# BEYOND HIGH-TOUCH VS. LOW-TOUCH: FIT-FOR-THE-FUTURE TECHNOLOGY

This article is produced by GreySpark Partners and originally published on GreySpark Partners website, and is a part of the article series (part 2 of 3).

To read the full article, [click here](#).

Since the installation of first transatlantic undersea cable, trading technology providers were tasked with simple mandates:

- Deliver information faster, from as many sources as possible and help investors and market operators to make better decisions and implement them quickly.

Fast forward to 2021 and the imperative for financial services firms of all ilk has moved away from just raw speed and toward the systematisation of trading decisions and the industrialisation of their implementation. Moreover, banks are still engaged in a struggle to regain competitiveness and bring down the cost / income ratios of their trading businesses. Therefore, the drive for automation and for the optimal allocation of human capital to the most value-added tasks now extends to all phases of the trading and client lifecycles.

This imperative – borne out of mounting regulatory constraints in the wake of the financial crisis – created an opportunity for technology vendors to alter their approach to systems architecture such that expenditure on both trading desk personnel and corresponding technology resources can be constrained or unleashed at will. Herein, the belief is that trading systems must be designed to preserve the ability of human traders to manually intervene in the operations of complex, automated execution programs when they deem it necessary to do so on either a pre-trade or at-trade basis, and that there is no other more optimal arrangement of functional capability – but, there is.

In this series of articles – produced in partnership with Itiviti – capital markets consultancy GreySpark Partners explores the current dynamics of the long-running debate over the dominance of high-touch versus low-touch trading systems design, arguing that the distinction between the two types is no longer necessarily relevant from an end-user perspective.

## Buy & Build Modularity: The Best of Both Approaches

In 2021, the client-facing franchises of trading businesses need their trading technology and its underlying systems to provide three, non-functional capabilities – that is, efficiency, agility and velocity – to remain relevant into the future. This hypothesis means that investment banks and non-bank brokers must be prepared to service their end-investor customers' needs with fit-for-the-future technology that leverages flexible production tools that are derived from a trader's real-world practices and workflows. Specifically, GreySpark believes that trading businesses require technology capable of satisfying those three non-functional capabilities needs in order to:

- remain relevant in a competitive and capital-constrained environment;
- reconfigure the business at will; and to
- unshackle change management and thus incentivise innovation thinking

Prioritising these trading technology needs means that businesses must allocate their capital intelligently by spending on systems research and development where it makes a difference to the franchise to do so, and to save on systems R&D where it does not make sense to spend. Hence, trading businesses rely on innovative approaches to systems design by third-party technology vendors to develop product offerings that intelligently bridge the gap in the R&D spending allocation and decision-making processes.

A current, leading approach to vendor-provided trading technology design that gained significant traction over the last three years is the so-called Buy & Build Modularity Approach founded on the idea of trading technology as platforms that contain functional components that be switched on or off at the user's discretion. As such, Buy & Build modularity is optimal for trading businesses struggling with capital constraints because it combines the advantages of both packaged software and development frameworks by providing set functionality off-the-shelf while also accommodating a high degree of components customisation.

Vendor-provided systems design that incorporates the Buy & Build Modularity Approach is also optimal for capital-constrained

Not only do the systems function from Day 1, but their architecture allows users to continuously expand or customise the system to create competitive differentiation for themselves in line with their business needs and available investment budgets. Because the system functions out-of-the-box, it thus permits competitive differentiation without creating dependency on the system's core trading functionalities or on software development teams, whether they be in-house, vendor or certified third-party developers.

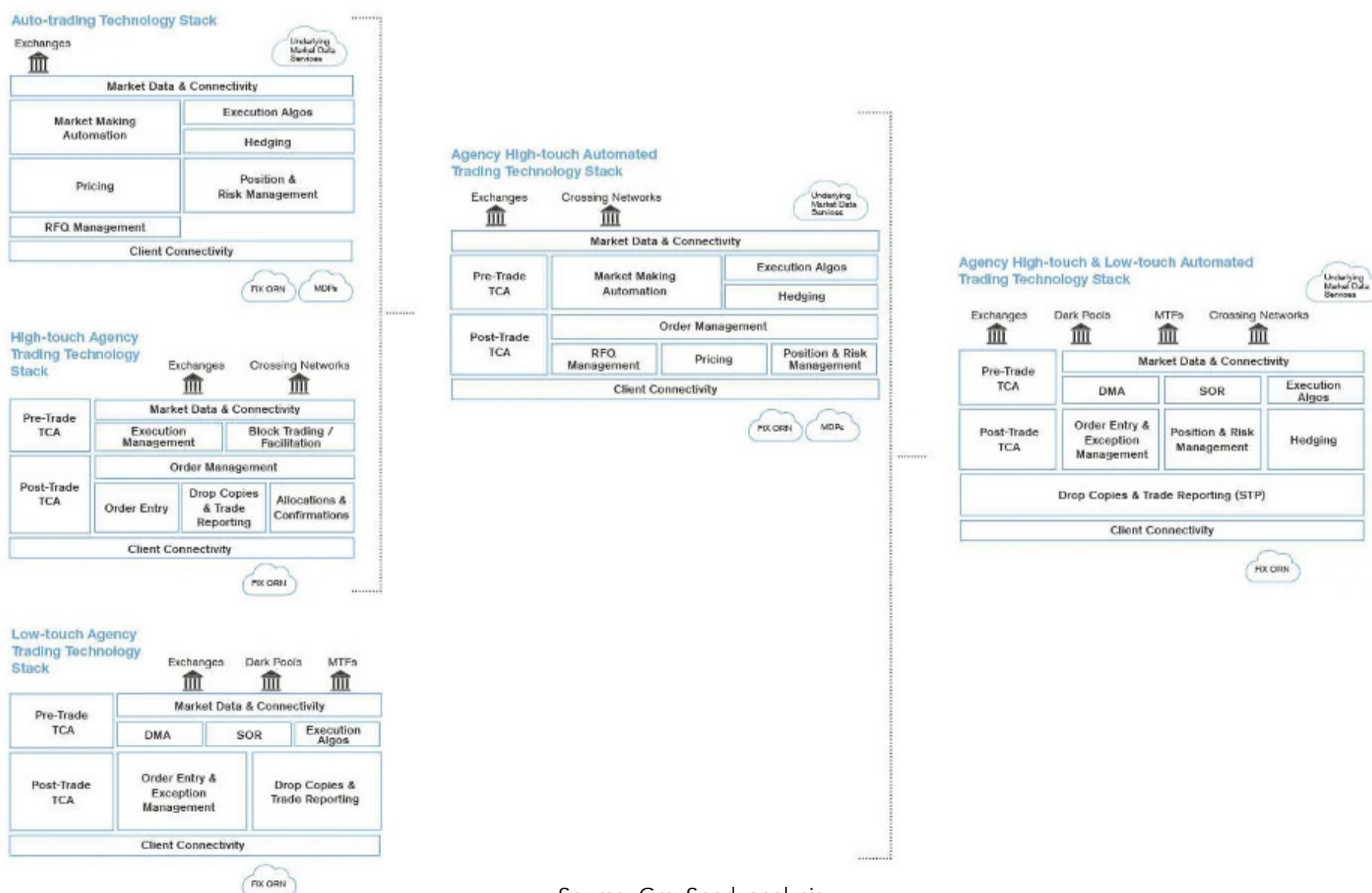
However, as the production software in use by the client diverges ever farther from the base software, a high quality of vendor-provided service and support is required. Where service and support lag, users can find that their customisations may be incompatible with newer versions of the system, resulting in the user having to ditch costly customisations or running outdated software that does not benefit from new developments on the part of the vendor.

Figure 1 depicts the evolutionary journey that investment bank trading business technology stacks, for example, typically undertake when the institutions work with their buy-side clients and technology vendor partners to enable a Buy & Build Modularity Approach to front-office brokerage / exchange platforms, systems or solutions integration. At the core of the architecture and design philosophy is the convergence of high-touch and low-touch agency modules into a unified system that enables the best elements of both approaches with an optimised level of process and workflow automation throughout.

Herein, clients benefit from the ability to independently pilot a solution capable of supporting the specificities of how they manage flow or orders within their own firm – as well as how they prefer to execute – using a utility-like interface that masks the complexity of the systems underneath. In turn, the trading business benefits from the ability to reconfigure its instruments and products outlay at will, offering an overall slate of best-of-breed services that accentuate its niche capabilities and specialisations on a per client type or per marketplace basis. A subsequent decrease in the levels of 'friction' between front-office trading systems used by clients versus any element of the trading business' front-to-back technology stack is then realised, allowing personnel the resources required to either manage change effectively or to think innovatively about how best to meet client services technology needs over the medium-to-long-term predominantly by buying in – as opposed to building in-house – new solutions.

This article is first published on GreySpark Partners website and is only part of the article. To read the full article, [click here](#).

Figure 1: The Evolution of the Trading Business Front-office Trading Technology Stack



Source: GreySpark analysis



# London Stock Exchange

## ETF TRADING: NEW TRADING TOOLS HAVE EMERGED, ACCELERATING THE GROWTH OF ON-EXCHANGE EXECUTION

*Ivan Gilmore, Head of Securities Trading, London Stock Exchange, London Stock Exchange Group (LSEG) writes that stock exchanges have shown resilience through mixed times and looks forward to a golden age of ETFs that lies ahead...*

ETF trading volumes in Europe hit a new record in 2020. This is not a big surprise to the ETF industry given the consistent multi-year inflows, coupled with the heightened market volatility witnessed last year. In fact, ETFs seemed to attract even more inflows and trading activity precisely because the product wrapper proved its worth at the height of that volatility.

From an exchange perspective, stock exchanges showed resilience throughout the volatility caused by the Covid-19 pandemic, and indeed saw a larger increase in trading activity over the entire year relative to the wider trading ecosystem. According to BlackRock, ETF volumes in Europe hit USD2.8 trillion in 2020, up 22 per cent on 2019, and ETF on-exchange activity grew by 46 per cent. It's clear that investors and market makers are leveraging the transparency and resilience that central limit order books offer. Exchange-led pre-trade transparency is at the heart of well-functioning markets, especially so for ETFs where there is often less investor turnover than in, for example, single stocks.

Moreover, market makers rely on the multilateral nature and trading anonymity of central limit order books to calibrate and benchmark their pricing models and to trade effectively. Order books offer an extremely valuable tool that trading participants rely on, in part due to the complexity of modelling and trading such a wide variety of Exchange Traded Products (ETPs), and the fact that customers who trade directly with market makers are inactive much of the time. The direct to customer pulse can be less reliable than the consistent heartbeat of the order book.

ETP turnover on London Stock Exchange increased by 50 per cent annually in 2020. That strong momentum has continued into this year, as evidenced by average daily value traded (ADVT) in Q1 2021 growing by 12 per cent year-on-year to GBP736 million. There are signs that this trend of on-exchange ETP execution will continue to outpace trading growth elsewhere, as more and more brokers and end investors utilise new execution tools to obtain, and importantly to better understand and evidence, best execution.

Investment banks are working on recently developed ETF algos, which are engineered with an ETFs intraday adjusted theoretical value in mind. These theoretical values are what the market making parts of the business work tirelessly to model, and of course, each market maker's value will be subtly different. This is similar to the concept of equity algorithms navigating that landscape, trying to trade around an intra-spread "fair value" for an equity that is often somewhere between the bid and the offer. Market participants will point out that there are also premiums and discounts to navigate with ETFs and indeed the algos are being built to understand these. But for investors who want to trade immediately and who therefore are content trading at current observable prices, navigating these premiums or discounts is often less of an immediate concern than finding high quality liquidity in an efficient and automated way.

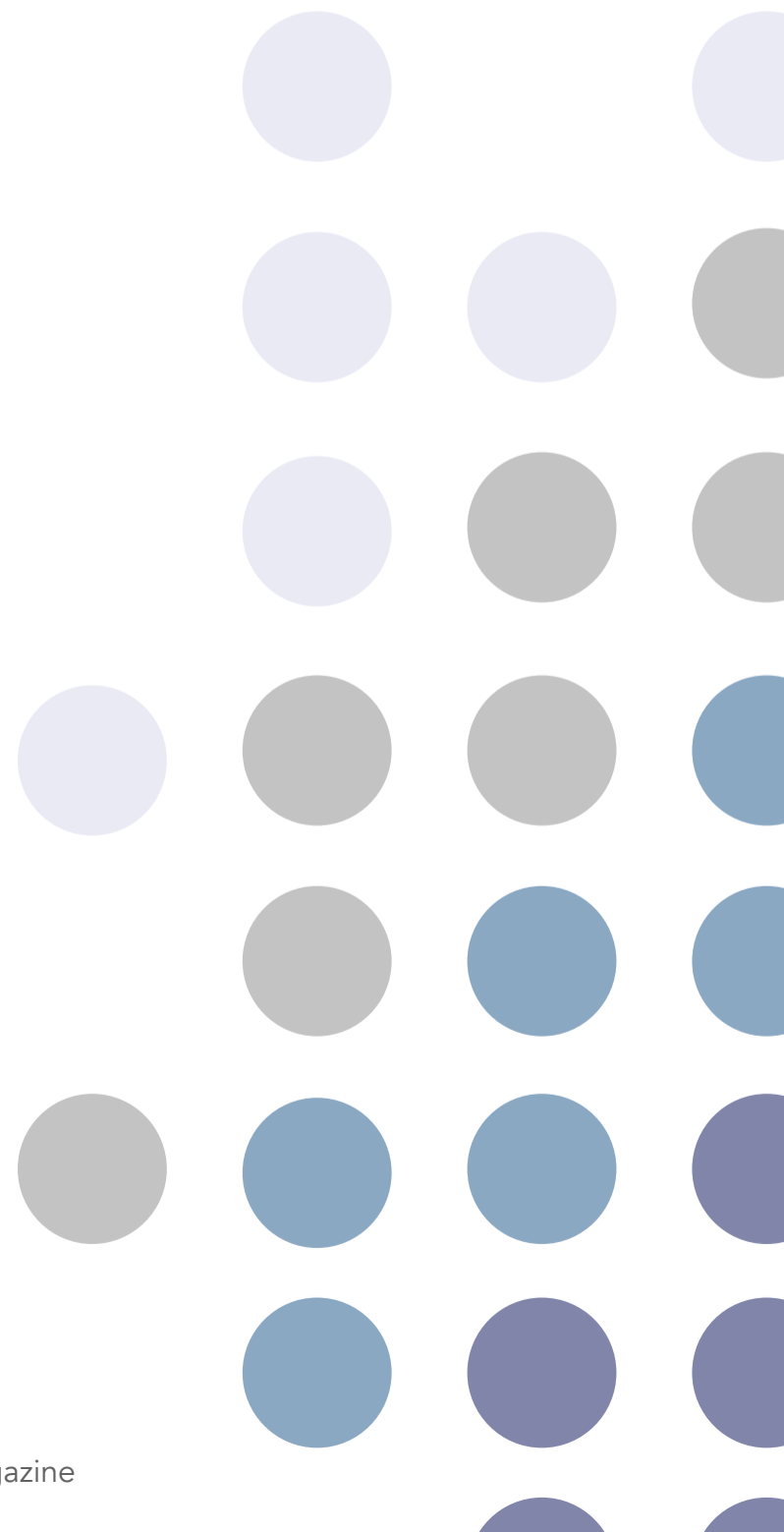
Let's look at a recent example of how efficiently ETFs have been traded on exchange. In early March 2021, an equity emerging markets UCITS ETF traded over USD570 million in a four-day period on London Stock Exchange's order book. On one of those days it traded approximately USD170 million. The average time-weighted spread between the bid and the offer over the entire 4-day period was under six basis points. This is quite an achievement for an emerging markets ETF. Considering the evidence of this tight spread alongside the fact that the average daily value traded was over 100 times the ETFs ADVT for 2020, one can see that using the order book provided an efficient way of accessing high quality liquidity in that ETF. The open-ended nature of the ETF wrapper allows market makers to continuously offer liquidity knowing they can "create" new ETF shares.

In addition to the uptake of ETF algos, which benefit from on-exchange pre-trade transparency, we are also witnessing a new form of on-exchange trading emerging. London Stock Exchange has been at the forefront of the development of a new innovative order type, the request-for-quote (RFQ) order type. This is a fully automated workflow and brings all the benefits of RFQ trading into a central limit order book world, including central counterparty clearing. It provides access to both lit and hidden liquidity alongside liquidity from RFQ market makers in one single atomic trading event. Launched in 2020, RFQ 2.0 is seeing over USD5 million of trading daily across several hundred ETPs, and as more RFQ requestors and responders adopt the new order type, we expect volumes to continue to grow. With the ability to get a full fill every time, most often inside the visible order book spread, RFQ 2.0 provides an attractive alternative to bilateral execution which is detached from the heartbeat of the order book.

It is also worth noting that with the Central Securities Depositories Regulation (CSDR) on the horizon, we believe that more and more volumes will move to a CSDR friendly environment. Just under 90 per cent of ETP trading so far this year on London Stock Exchange has been in ETPs impacted by the impending CSDR. Despite CSDR not applying to UK settlement infrastructure, it will still apply to settlement for most ETP trading (by value) in the UK, and of course in the EU, as most ETP issuers have adopted an international settlement model known by the mnemonic ICSD.

At London Stock Exchange, we continue to believe that trading members and investors will increasingly want to adopt these new innovations, enabled by the same on-exchange execution experts that have developed a plethora of execution techniques and equity algos over the past 20 years. We believe the next few years can be a golden age for highly efficient ETF execution at a time when investors are increasingly utilising the ETF wrapper in their investment portfolios.

Originally published in ETF Express [<ETFExpress article link>](#)



# FX AGENCY COST ESTIMATOR

## SETTING FX ALGO TRADE HORIZONS? IT'S IN THE ANALYTICS

Awareness and management of optimal trading horizons and market participation is an important consideration for FX best execution and risk control. And because FX markets are open 24 hours, there is no standard horizon target except when a specific time to completion is guided by regulatory or workflow deadlines (for example, 16:00 GMT fix time).

Recent empirical studies show that parent order execution costs can also be explained by order duration, even comparable in impact to order size or participation rate measures. Based on observations in our FX Peer database, most broker algo executions are completed within 30 minutes of release, with many taking as little as ten minutes or less.

Virtu Analytics' recent launch of its FX ACE model, which includes API access through our Open Technology data-as-a-service offering, can help you in answering the question as to what the optimal time horizon is for FX trades. Its easy to integrate options means the data can be made available throughout the investment life cycle.

### FX ACE

The FX ACE model provides pre-trade cost, impact, risk and other pre-trade information associated with uniform (TWAP), volume participation (VWAP) and several other risk-optimized strategies for more than 100 currency pairs.

Outputs are provided for a variety of scenarios that include a wide range of target notional values (between 5M and 1,000M), execution horizons (between five minutes and six hours) and order arrival times spanning the 24-hour FX trading cycle.

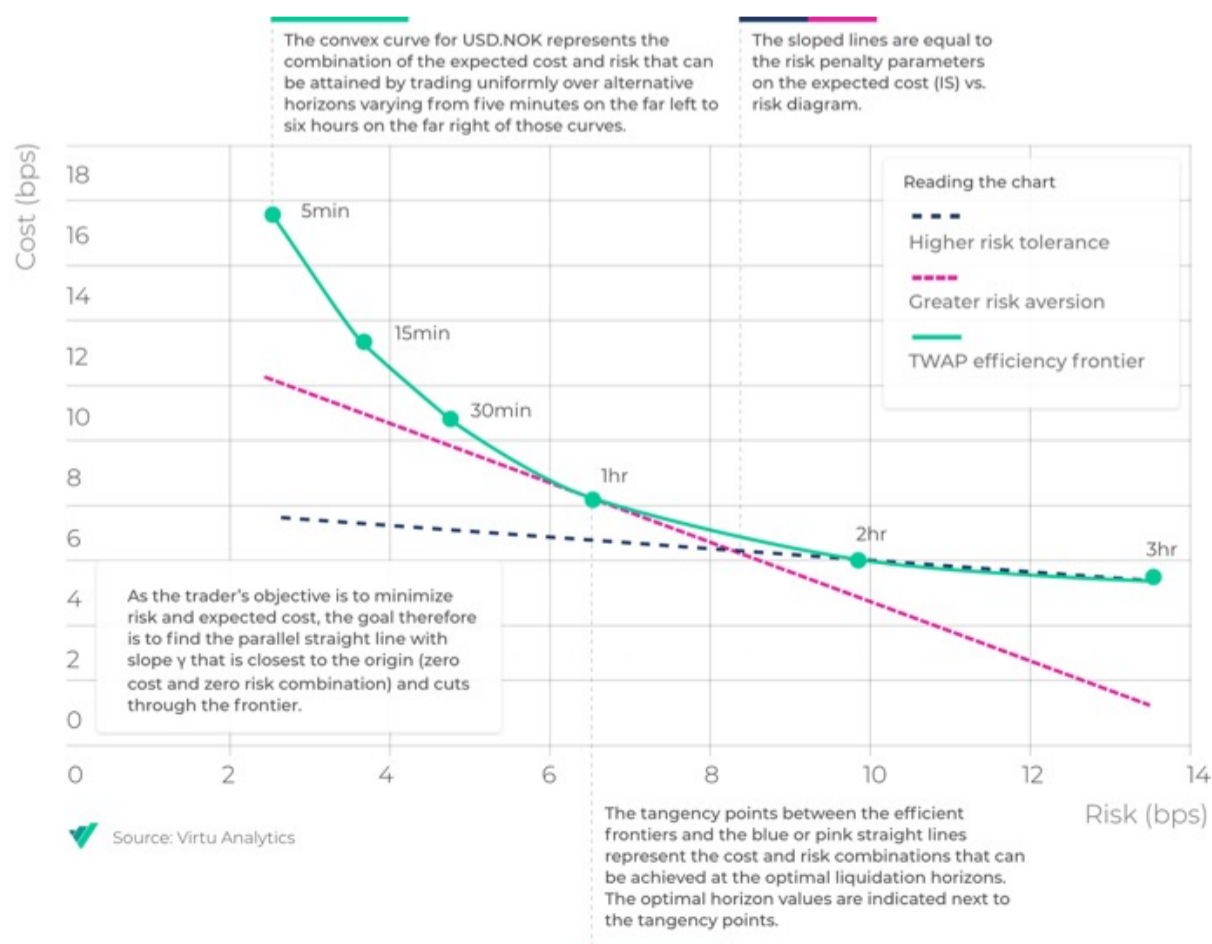
### Example Use Case:

Consider an order for 100M USD.NOK hits your blotter at 6:00am GMT. You want to optimize the trade horizon based on USD.NOK's cost and risk profiles and use a TWAP (risk neutral) strategy. This assumes execution buckets are the same size throughout the order.

We group the possible risk constraints into two buckets:

- **Risk averse ( $\gamma=0.6$ ):** characterizes a trader who is willing to sacrifice the cost increase of 60 mils (1 mil = 0.01bps) in exchange for a single basis point risk reduction.
- **Risk-cost tolerant ( $\gamma=0.1$ ):** characterizes a trader who tolerates only a small cost increase of 10 mils for one basis point of risk reduction.

### Response: TWAP Optimal Horizons for 50M in USD.NOK



On the chart, we see that the cost-risk sets for the risk-tolerant trader, represented by the shallow blue straight lines, can afford to trade the relatively risky Scandinavian currencies against Euro gradually over the three-hour horizon, while the risk-averse trader, with steeper magenta cost-risk set lines should trade more aggressively and complete the same order within approximately 60 minutes.

Since the order IS and risk penalty are both proportional to asset price volatility, the optimal horizon is largely unaffected by volatility. The observation explains why volatility prediction does not play a central role in the choice of target participation rates in applicable algorithms.

### PROPERTIES OF TWAP OPTIMAL HORIZONS FROM FX ACE

Table 1 shows the optimal liquidation horizons for multiple currency pairs determined by the method described earlier, using the cost vs. risk diagrams for notional values of 50M (in the left side of the table) and 250M (on the right side of the table) that are subject to liquidation by TWAP on behalf of the same risk-tolerant trader (characterized by  $\gamma = 0.6$ ) at different times of the day from 0:00 to 23:00 GMT.

### CONCLUSION

FXACE can assist you in generating actionable recommendations for algos on time-to-completion that can fine-tune the risk and cost control in FX scheduled algorithms. For more information about FX ACE or any other of our trade horizon decision-support tools for FX algos please contact [info@virtu.com](mailto:info@virtu.com).

**Note:** The long optimal execution horizon for the less liquid pairs, especially for large notional values, indicates the lack of sufficient liquidity in those pairs during the Asian market hours.

**Table 1: FX ACE Optimal Execution Horizons by Time of Order Arrival and Currency Pair**

Arr.time (50M)	50M									Arr.time (250M)	250M								
	EURUSD	USDJPY	GBPUSD	AUSUSD	USDMXN	EURCHF	EURNOK	USDNOK	EURDKK		EURUSD	USDJPY	GBPUSD	AUSUSD	USDMXN	EURCHF	EURNOK	USDNOK	EURDKK
0:00	5	5	10	10	45	60	120	90	360	0:00	30	10	45	20	120	180	360	240	360
1:00	5	5	10	5	30	60	120	60	360	1:00	20	10	45	15	120	180	360	360	360
2:00	5	5	10	5	45	60	120	60	360	2:00	30	15	60	20	360	360	360	360	360
3:00	5	5	15	10	45	90	240	90	360	3:00	30	20	60	30	360	360	360	360	360
4:00	10	5	15	15	90	120	240	180	360	4:00	45	20	60	30	240	240	360	240	360
5:00	10	5	15	15	90	90	180	120	240	5:00	45	20	90	30	180	180	240	240	360
6:00	5	5	10	10	60	60	90	60	120	6:00	30	20	45	30	120	120	120	120	240
7:00	5	5	5	5	20	20	30	15	60	7:00	15	15	20	20	60	60	60	45	120
8:00	5	5	5	5	10	10	10	5	30	8:00	5	10	10	15	30	20	20	15	90
9:00	5	5	5	5	5	5	10	5	20	9:00	5	10	10	15	30	15	20	15	45
10:00	5	5	5	5	10	5	10	5	20	10:00	5	15	10	20	45	15	30	20	45
11:00	5	5	5	5	10	10	10	10	15	11:00	10	15	10	20	45	20	30	20	45
12:00	5	5	5	5	10	10	10	5	15	12:00	10	15	10	20	30	20	30	20	45
13:00	5	5	5	5	5	10	5	5	10	13:00	5	10	10	15	10	20	15	15	30
14:00	5	5	5	5	5	5	5	5	10	14:00	5	5	5	10	5	15	20	10	30
15:00	5	5	5	5	5	5	5	5	10	15:00	5	5	5	10	5	10	15	5	20
16:00	5	5	5	5	5	5	5	5	5	16:00	5	5	5	10	5	10	15	10	10
17:00	5	5	5	5	10	20	10	15	15	17:00	10	10	10	20	10	30	45	20	30
18:00	5	5	5	10	5	20	45	15	20	18:00	10	15	15	30	10	60	120	45	45
19:00	5	5	5	10	5	30	45	20	30	19:00	15	20	20	30	15	90	120	60	90
20:00	5	5	5	10	5	30	45	20	30	20:00	20	20	20	30	15	90	90	45	60
21:00	5	5	5	15	10	30	30	20	15	21:00	20	30	30	45	20	45	45	45	30
22:00	10	10	10	60	10	240	240	240	360	22:00	180	120	180	120	240	360	360	360	360
23:00	20	15	30	30	90	120	180	180	360	23:00	90	60	120	60	180	240	360	360	360

The optimal trade horizons and FX ACE share some common properties:

- **Optimal trading horizon:** an increasing function of notional order size or participation rate and a decreasing function of the risk penalty factor.
- **Estimated IS cost:** an increasing function of the participation rate, volatility and spread.
- **Cost of the optimal horizon:** the strategy grows with a slower rate of participation compared to that of a TWAP strategy in a fixed trading horizon scenario.



# RETAIL FLOW: CAN FREE TRADING BE MORE ADVANTAGEOUS THAN BEST EXECUTION?

Since March 2020, investments from individuals have increased significantly. Equity market volumes have more than doubled, with growth in retail investments outpacing that of any other market participant. For instance, Euronext recorded for a €557m average daily volume from retail investors on equities in Q1 2021 vs €250m in Q1 2019.

However, it has also led to an expansion in the number of brokerage firms in Europe providing retail execution services. Many brokers offer more modernity and simplicity for individual investors, with web and mobile investment interfaces, as well as accessible market analysis. But the key area where brokers compete most is on brokerage fees, which many have heavily reduced, or even removed entirely, to attract investors. The resulting reduction in revenues has prompted many brokers to shift to new execution solutions, moving away from the stock exchange and multilateral trading platforms to execute their clients' orders through internalised solutions.

We find two types of players in internalised solutions:

- **Systematic Internalisers (SIs):** electronic liquidity providers or banks that have built their own platforms to execute client orders by making themselves the single counterparty, offering prices that may differ depending on the type of investor (professional or private).
- **New retail exchanges:** platforms that have obtained a regulated market licence under divergent European regulations to benefit from the same status as traditional stock exchanges. These are mainly reserved for the flow of orders from private investors, and unlike traditional exchanges and multilateral trading platforms, they focus more on connecting retail brokers with market makers through a methodology that excludes price competition between counterparties for the execution of investors' orders.

Unusually, neither of these models generates income on fees charged to brokers. Instead, they recoup their revenues from the execution price, directly on the spread for SIs, or by passing on significant charges to the market makers, who themselves find remuneration on the spread within the retail exchange framework, and which creates an unfavourable execution price for the retail investor.

The European MiFID regulation has long addressed the practice of replacing transaction fees with remuneration on the execution price, aiming to prevent a deterioration in execution price to the detriment of individual investors. Already with MiFID I, ESMA required brokers to select the best execution venue with "total consideration of the price of the financial instrument and the costs related to execution", and MiFID II prohibits remuneration to firms for routing orders to particular venues where there are conflicts of interest. However, the MiFID rules covering conflicts of interest between brokers and market makers leave significant room for interpretation, enabling local regulators to apply very different rules in different European countries.

This means that some countries in Europe, predominantly Germany, can act as havens for compensation models within the limits of the rules protecting individual investors, which would not be authorised in most other European countries. For example, payment for order flow, a practice where a broker receives remuneration from a market maker in return for transmitting its client orders for execution, is tolerated in Germany while it is limited in many European countries, such as in the UK since 2012 or the Netherlands since 2014.

Many brokers in fact perform a sort of regulatory arbitrage by routing their client orders to German models, where trading is free of charge because the remuneration is taken directly from the investors as part of the execution price.

Given the record levels of volatility in 2020, which were accompanied by a widening of spreads, quality of execution could be expected to be a key argument in the strong competition between retail brokers. However, it was not. The concept of execution quality seems to be a very difficult subject to explain to a retail population. Individual investors are left with the erroneous impression that the value provided by a better execution price is minimal compared to the elimination of execution costs, especially on very liquid shares when the small spread seems to leave very little room for price improvement.

Some traditional exchanges in countries that have more stringent local regulations on investor protection have invested in models where orders from individual investors can be executed at a more advantageous price than professionals. A Euronext study in 2020 using QuantHouse data showed that retail on-exchange models provided a price improvement that could largely outweigh the execution costs associated with trading on the exchange.

The study compared the execution prices of retail transactions on the stock exchange with two best execution benchmarks used by internalisers: the **VBBO** (Volume Weighted Best Bid & Offer), the execution price of a consolidated order book integrating all the orders from multilateral platforms, and the **EBBO** (European Best Bid & Offer) representing the best price available in Europe at the first limit.

It found that, on average, retail orders executed on stock exchanges outperform the VBBO by 3.22bp, i.e. a gain on the execution price 4.3 times higher than the execution costs charged by the stock exchanges. Even in comparison with the EBBO, which internalisers tend to use as a benchmark, the price executed by retail investors on the exchange is on average 1.36bp better than the EBBO, an improvement representing 1.8 times the fee level charged by the exchange.

These figures could confirm that the appeal of internalisation to brokers is not at all linked to the search for best execution for their end clients. Paradoxically, the race to 'low cost' seems financially unfavourable for end investors, who see their execution costs replaced by much higher new costs hidden in the execution price. Despite this, retail flow continues to leak from exchanges onto internalised solutions.

The end investor seems to be the first casualty of variable European regulations in terms of retail protection. But they are not the only victims. When retail flow migrates from a multilateral to an internalised model, this flow, which formerly contributed to price formation and price improvement, is now being privatised by a few internalisers. Thus the absence of retail investors on the public markets can cause prices and natural market liquidity to deteriorate, with a negative impact for all market participants.

In this worrying context for financial markets, the European Commission is starting to analyse the risk of zero commissions on stock trading. For the future of European markets, we can only hope that a new regulatory framework will be applied uniformly in all European countries with a similar level of investor protection.

**“Individual investors are left with the erroneous impression that the value provided by a better execution price is minimal compared to the elimination of execution costs, especially on very liquid shares when the small spread seems to leave very little room for price improvement.”**



# HOW TO EFFECTIVELY TRADE AT LOW PARTICIPATION RATES WHILE UTILISING DARK BLOCK LIQUIDITY

European buy-side traders are increasingly voicing frustration about feeling pushed to trade at low participation rates via strategies like Volume Weighted Average Price (VWAP) and Percentage of Volume (POV), whilst also keen to utilise dark block liquidity.

Traders and investment firms use these strategies for a variety of reasons including the lack of clarity on price direction, as well as fear of market impact and being adversely affected by the price of a dark block. On top of this, increased volatility seen since the start of the pandemic has led some to 'trade the average' in anticipation of being caught on the wrong side of price moves, which can increase the opportunity cost and timing risk through longer order durations. Increasing order durations might be ok when there is no alpha present in the order, such as for a CRB desk with a neutral alpha unwind, however for most buy-side traders this is not the case and managing for momentum is crucial. Using low participation rate strategies while utilising dark block liquidity therefore is challenging but is there a way to do it effectively?

The use of low participation rate strategies such as VWAP and POV in the market is significant. The recent algorithmic survey compiled by The Trade in spring 2021 showed 59% of respondents cited using VWAP and 57% using POV<sup>1</sup>. Other industry reports have shown that approximately 50% of algo strategy usage in the market today is also through these strategies<sup>2</sup>.

As well as contending with increased volatility, traders' ability to forecast appropriate price levels at which to potentially change trading strategy has been partly hindered by changes in market microstructure. Overall market volumes have reduced but, more importantly, where specific volumes are found in the market has changed. For example, composite lit continuous volumes are down from 73% of total market volumes in July 2016 to 58% in April 2021<sup>3</sup>, a 20% reduction in the liquidity that VWAP and POV algos typically interact with when creating their trading schedule and reacting to being ahead or behind of that schedule. In addition, the closing auction has become an even larger part of any VWAP calculation, making the proportion of any order traded during the continuous session even lower. In contrast, overall dark trading volumes have returned to pre-MiFID II levels<sup>4</sup> and dark liquidity has become blockier in nature, with ~40% of dark principal now above LIS<sup>5</sup>.

Tapping into dark liquidity helps traders reduce their trading costs, as cited in a recent FCA paper looking at the effect of banning dark pools.

The paper showed better performance vs. the arrival price (implementation shortfall) for orders with a larger proportion of executions in venues with lower pre-trade transparency levels such as in dark pools<sup>6</sup>.

This is also evident in the savings Liquidnet clients have made through trading blocks, as seen in our 'Value of the Block' analysis. Clients saved on average 19.7bps of market impact and spread costs on executions in Stoxx 600 names during 2020. The timing risk saved through block executions in Stoxx 600 names was also significant, saving 1.4 days (743 minutes) of exposure in the market vs. trading at 10% POV<sup>7</sup>.

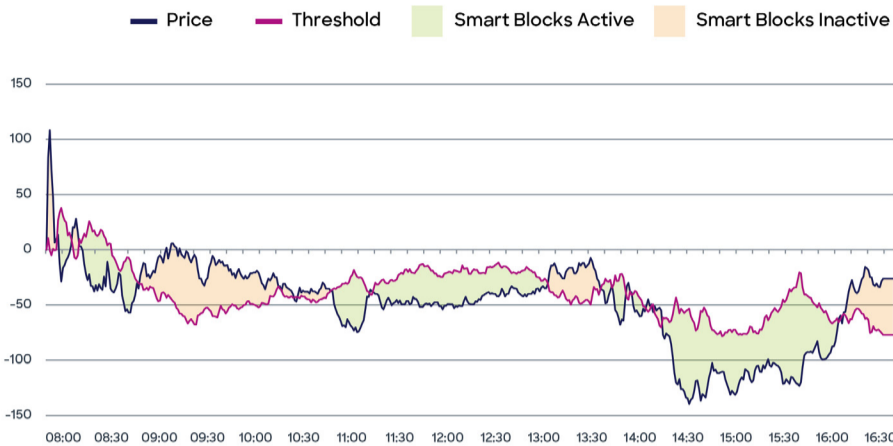
With the benefits of dark block liquidity evident, and the need to trade via low participation rate strategies also clear, traders have increasingly asked Liquidnet to develop solutions that help them to reconcile these two positions: trading over longer periods of time and at lower participation rates, whilst smartly accessing dark block liquidity. Liquidnet Smart Blocks is a global proprietary solution that aims to achieve this by dynamically stepping in and out of the block market, at opportunistic price levels that the algo has determined are appropriate levels to trade, while trading along a VWAP or POV strategy as chosen by the trader.

The opportunistic price levels determined by the algo are calculated using pre-defined rules related to choices made when deciding the benchmark and the degree of movement required, for example 10% of the stock volatility, on-side versus the stocks correlated basket. This negates the need to have a clear price-level in mind pre-trade or a clear view on price direction, something traders often are unclear on at the start of an order.

In the first example shown (Image 1), depicted as a buy order for Just Eat Takeaway (TKWY NA), the benchmark was chosen as the correlated basket signal (which is our proprietary signal from Parameta Solutions, designed to highlight when a stock has dislocated from its peers) and the required offset was 15% of the stock volatility, so in this instance 25bps of movement. As the stock price moves throughout the day, there are periods of time when the price is favourable compared to the threshold-adjusted correlated basket, activating the Smart Block signal and the search for block executions in dark venues for the order. As the stock rallies relative to the basket, the signal deactivates and the POV order continues as its pre-set rate of execution.

Image 1

## Extend Dynamic POV with Smart Blocks Example: Buy TKWY NA on 15 March 2021

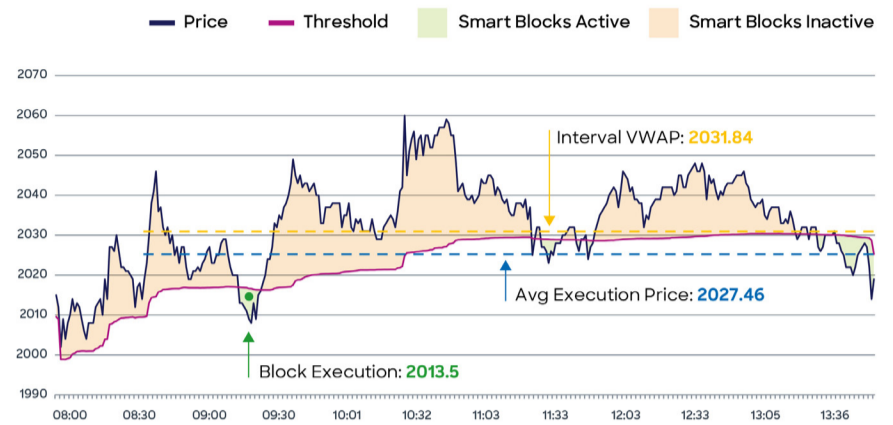


Source: Liquidnet TickDB data - 15 March 2021

Liquidnet

Image 2

## Improving performance vs. VWAP using Smart Blocks VWAP buy order in UK mid cap April 2021



Source: Liquidnet TickDB - Client order in UK mid cap on 1 April 2021

Liquidnet

The second chart (image 2) is a representation of a real VWAP order by a Liquidnet client using Smart Blocks, where the trader used a 10% volatility offset vs. the interval VWAP. As the price became favourable, Liquidnet Smart Blocks became active and the algo achieved a block execution using a conditional order type in an external MTF, at favourable price levels, outperforming the interval VWAP by 21.5bps.

If the challenges outlined here seem familiar to you as a buy-side trader, dynamic POV or VWAP combined with the functionality of Liquidnet Smart Blocks could help you to realise the benefits of dark block liquidity, while trading at low participation rates via a longer time horizon strategy. Smart Blocks is in the process of being made available globally, so please speak to your Liquidnet representative to explore the functionality in more detail.

### For more information contact:

Gareth Exton  
Head of EQS Distribution EMEA  
Global Execution and Quantitative Services, Liquidnet  
[gexton@liquidnet.com](mailto:gexton@liquidnet.com)

<sup>1</sup> Source: The Trade 2021 Algorithmic Trading Survey - <https://www.thetradenews.com/the-trade-magazine-spring-2021/>

<sup>2</sup> Source: Virtu European Market Landscape February 2021 - [https://www.virtu.com/uploads/documents/Virtu\\_EuropeanMarketLandscape\\_February2021.pdf](https://www.virtu.com/uploads/documents/Virtu_EuropeanMarketLandscape_February2021.pdf)

<sup>3</sup> Source: Big XYT - Liquidity Trends since July 2016 - Lit Exchange/MTF April 21 vs. July 16.

<sup>4</sup> Source: Big XYT - Liquidity Trends since July 2016 - Dark MTF April 21 vs. July 16.

<sup>5</sup> Source: Bloomberg, LIS % of Dark Market, Q1 2021

<sup>6</sup> Source: FCA Occasional Paper 60: Banning Dark Pools - <https://www.fca.org.uk/publication/occasional-papers/occasional-paper-60.pdf>

<sup>7</sup> Source: Liquidnet Analysis - LIS Executions in Stoxx 600 names via Liquidnet, January to December 2020



# YOUR BEST WAVE IS STILL OUT THERE

**When it comes to innovation and technological progress in the trading space, the Swiss Stock Exchange has an outstanding track record. Recently, its operator SIX has invested in microwave-based trading connections and owns today's largest microwave network in Europe. A closer look reveals how this breakthrough technology enables the fastest data transmission between trading centers – and where the service is already available.**

At the Swiss Stock Exchange, we have a long history of not only ensuring the stability and availability of our trading infrastructure, but also of making the most modern and innovative technology accessible to all our participants. Our track record of deploying breakthrough technology in the trade and post-trade areas harks back all the way to 1995 when we were the first exchange in the world to introduce fully electronic trading and settlement. To actively shape the future of trading, we aim to offer the most advanced technology within our unique market structure. Today, the Swiss Stock Exchange is the first regulated exchange in Europe to own and operate an international microwave (or radio frequency, RF) network which enables the fastest transmission of market data between trading centers.



**By Gregor Braun,**  
Head Sales Switzerland & Europe, SIX Swiss Exchange

## **The largest microwave network in Europe**

The microwave network of the Swiss Stock Exchange offers solutions to trading firms looking for lowest latency from and to Zurich. SIX aims to making markets more efficient and bringing faster and more secure data to customers as well as fostering equal access to the most modern market data transmission technology for the benefit of all market participants.

SIX is the largest microwave network provider in Europe and the second largest in the world. The network is operated by SIX subsidiary 12H (see box) and currently links Zurich with London, Frankfurt and Milan as well as Milan with Frankfurt and London. Furthermore, SIX partners with the operator of Nasdaq's Nordic exchanges to offer microwave services between London and Stockholm (see box).

## **Better execution conditions for all market participants**

The ultra-low latency microwave network of SIX is crucial for trading participants of the Swiss Stock Exchange – such as market makers and liquidity providers – be it in the equities and ETF space or as well as for fixed income, derivatives and FX trading. By offering the fastest transmission of market data between trading centers, SIX is able to provide the best possible trading conditions in Swiss securities and strengthen our position as their reference market.

Microwave technology enables customers to execute their trading strategies faster while at the same time improving their risk management. It allows Swiss Stock Exchange trading participants to identify price movements and implement investment decisions as quickly as possible. As a result, improved liquidity and tighter spreads create better execution conditions for all market participants.

SIX is committed to provide a single source for the best low-latency services from and to Zurich. Equal access to the microwave network is ensured for all trading participants at both regulatory and technical levels, in line with Switzerland's legal framework.

(Publication date: 31.05.2021)

### Taking the direct line

Microwave technology allows fastest transmission of trade data between exchange data centers. Microwave can deliver lower end-to-end latency than fiber because it takes a more direct line between the two ends of the network. Also, microwave signals travel at the speed of light through air, rather than over fiber, which can attenuate signals. This speed advantage is coupled with a high level of availability and reliability. For this purpose point-to-point connections between the matching engines of exchanges are designed, built and operated. Along the ideal path the data signals are reinforced through dishes on towers. However, every gain comes with a downside which in this case is capacity, meaning the limited amount of bandwidth available per route.

### Democratizing low latency access

Through its market-leading know-how and its investments in technology, SIX is uniquely positioned to further grow its microwave services. The completion of the route between London and Stockholm for RFNE was a great achievement in 2020 and despite continued Covid-19 impediments SIX is working on further expanding its network. SIX is convinced that building and operating low-latency networks is a key puzzle piece in the democratized low latency access to exchanges.

For this purpose, SIX is looking to enlarge its European footprint and offer the services to other exchanges and market participants. This includes executing on the plan to connect BME, the Spanish market infrastructure group acquired by SIX, to the microwave network. In general, SIX can help other exchanges by providing equal low latency access and allow them to keep a level playing field on their markets.

To be able to continue to offer market leading low latencies and highest availability SIX will continuously invest in improving routes and selecting the best available technology.

**“Microwave technology enables customers to execute their trading strategies faster while at the same time improving their risk management.”**

### Combined expertise, unique offering

The microwave service of SIX is fully integrated in the portfolio of the Swiss Stock Exchange. It was launched in 2018 through the Zurich-based joint-venture 12H AG (“12H”) between the Swiss financial infrastructure provider SIX and the microwave solutions provider 12Horizons Pte Ltd. Majority-owned by SIX since early 2020, 12H also entered a partnership with the operator of Nasdaq’s Nordic exchanges and created the jointly owned company RF Nordic Express AB (“RFNE”). In September 2020, it successfully launched its first service between London and Stockholm, further extending the unique low-latency microwave service available through the Swiss Stock Exchange.

[www.six-group.com/microwave](http://www.six-group.com/microwave)

**SIX Swiss Exchange**

**Zurich. London.  
Frankfurt. Milan.  
Stockholm.**

**Discover the largest microwave network in Europe.**

Our ultra-low latency microwave network enables trading participants of the Swiss Stock Exchange to benefit from the fastest transmission of trade data. Discover how you can execute your trading strategies faster and improve your risk management.

**Swiss-made. World-class.**

**SIX**

[six-group.com/microwave](https://six-group.com/microwave)



# UNDERSTANDING THE LIQUIDITY LANDSCAPE IN EUROPE

- Since MiFID was reviewed there has been considerable discussion about the evolution in the distribution of market liquidity across various execution venues in general, and about the proportion of equities trading conducted on venues vs systematic internalisers in particular.
- A diverse set of open and competitive execution venues for equities trading help different end users achieve their objectives, on the one hand by issuers raising capital at attractive prices and on the other hand by investors efficiently allocating their investments. A robust market structure also fosters financial stability by providing a reliable cushion during distressed market conditions.
- Further improvements of data definition and data quality are key areas for AFME. We support substantial improvement of the identification of different trade categories, which should help ensure that regulators and policy makers are able to develop a more detailed understanding of the status of European equity markets.
- Our analysis of Q1 2021 data shows that on-venue trading represents 83% of the total addressable liquidity. Volume traded off-venues, on systematic internalisers and pure OTC, represents only 17% of the total volume of the total addressable liquidity.
- The relatively low volume of risk-intermediated trading activity on systematic internalisers is not substitutable by other non-intermediated trading, and it would not migrate to a continuous lit order book trading if systematic internalisers were not providing risk-intermediation for some of their trading with their pension and investment fund clients. This trading activity does not impact the quality of the price formation process in Europe post MiFID II and is subject to strict post-trade transparency obligations, as any other trading activity.
- Amongst the trading volumes traded on-venue, 7% was non-displayed. Non-displayed liquidity traded on venue also serves the needs of pension and investment funds by enabling firms to manage their clients' implicit costs by reducing market impact. This trading activity run by trading venues and capped by law at 8% of total trading, is also subject to strict post-trade transparency obligations.
- The various ways of trading across existing execution venues all serve different functions and market needs. No trading modality is superior to others. Investors of all natures have different objectives and strategies. Continuous lit order book trading is valuable but not interchangeable with banks' systematic internaliser risk-intermediated trading, which plays a critical role for pension and investment funds. Pensioners and savers would be worse-off if diversity of ways of trading is curtailed.
- A suboptimal trade reporting framework, with insufficient identification and flagging of the different trade categories, including of those that are only technical trades, increases the complexity of the European equity markets structure that otherwise would be easier to understand and better placed to serve the interests of end users.

In summary, available data shows that there has been no material post-MiFID II increase or decrease in the proportion of trading executed across the various types of execution venues. Moreover, there has been no observable decline in the quality of the price formation process.

## Association for Financial Markets in Europe

London Office: 39th Floor, 25 Canada Square, London E14 5LQ, United Kingdom T: +44 (0)20 3828 2700

Brussels Office: Rue de la Loi 82, 1040 Brussels, Belgium T: +32 (0)2 788 3971

Frankfurt Office: Bürohaus an der Alten Oper, Neue Mainzer Straße 75, 60311 Frankfurt am Main, Germany T: +49 (0)69 153 258 963

[www.afme.eu](http://www.afme.eu)

# ADAPTABILITY IN THE FACE OF UNCERTAINTY

Uncertainty is a word that has come to have new levels of meaning over the course of the past year as we try to negotiate our way through the personal and business changes associated with a global pandemic. The investment management industry was already facing a series of fundamental changes with the reshaping of the UK's relationship with the European Union, the cessation of LIBOR and reviews to the dossiers that are the building blocks of our markets looming – as well as the opportunities presented by the growth in responsible investment and technological innovation.

Our industry has proven resilient during the pandemic and as we move into the second half of 2021 we will continue to focus on the next steps to address the longer-standing challenges and opportunities we face. The approach to resolving some of these financial services issues is likely to mean a level of divergence in regulatory approach and implementation for those firms operating across borders – so adaptability will be key for many firms.

The UK authorities have been clear on the timeline for cessation of LIBOR and have recently confirmed many of these dates in their 5 March communication. While we have a clear timeline – we are still awaiting confirmation of the approach for some products, particularly those tough legacy contracts that are unable to transition to a new rate prior to the deadline. The cessation of LIBOR is on 31 December 2021 and this is not far off, so certainty is needed to ensure smooth transition to new risk-free rates.

For firms that means being prepared and ready to go when developments arise. We have been working closely with our members to prepare them for the transition and, prior to the pandemic, many had made significant progress in the switch from LIBOR to SONIA and other alternative reference rates. Creating certainty is also dependent on other market participants, which is why earlier this year we called on companies to step up their efforts to transition away from LIBOR-linked bonds.

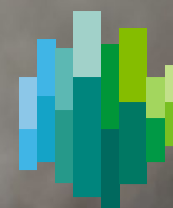
On the post-Brexit future, the UK and EU have concluded the technical negotiations on a financial services Memorandum of Understanding (MoU) and we should soon understand how the jurisdictions will deal with their integrated financial services legislation landscape going forward. Whatever the content, we know that it will not deliver the same level of integration. Firms will need to make sure they are able to navigate these changes, which may well occur on short time scale.

We can however already guess at the shape of things to come. In its proposed approach to implementing elements of the EU MiFID's 'Quick Fix' the UK's FCA has suggested a slightly different threshold for SME exemption (£200m rather than €1bn) and the permanent removal of RTS 27 and 28, as opposed to the two-year hiatus proposed by the EU, are small examples of perhaps bigger divergence ahead.

A wider review of MiFID/MiFIR regime is slated during the next year at EU level and the UK is conducting a Future Regulatory Framework Review and will use the UK Financial Services Bill to help adapt the UK landscape. These have the potential to deliver different treatments for similar products and we will need to be adaptable in our engagement and implementation around them. An example of this is how the UK and EU choose to proceed with the trading obligations set out in the regime.

With change comes opportunity, and as the examples above highlight we're in the midst of a period of significant change. Adaptability will certainly be the new watchword for investment management, enabling firms to mitigate the risks and take advantage of the new opportunities. Many of these issues will be discussed during the FIX conference and I look forward to hearing from the speakers on how we can tackle the challenges ahead.

**"...adaptability will be key for many firms."**



**GATELAB**

A EURONEXT COMPANY

# Stuck between a rock and a hard place?

**BREAK THROUGH  
THE CONSTRAINTS OF  
YOUR INCUMBENT  
TRADING TECHNOLOGY  
AND GROW WITH US**

Multi-asset

Multi-market/venue connectivity

Market making & price taking

SI/OTF/MTF & aggregator

OEMS/EMS & SOR

Algo trading & MiFID II compliance

Pre-trade, at-trade, post-trade risk

On-exchange & OTC

On-prem & SaaS



This publication is for information purposes only and is not a recommendation to engage in investment activities. This publication is provided "as is" without representation or warranty of any kind. Whilst all reasonable care has been taken to ensure the accuracy of the content, Euronext does not guarantee its accuracy or completeness. Euronext will not be held liable for any loss or damages of any nature ensuing from using, trusting or acting on information provided. No information set out or referred to in this publication shall form the basis of any contract. The creation of rights and obligations in respect of financial products that are traded on the exchanges operated by Euronext's subsidiaries shall depend solely on the applicable rules of the market operator. All proprietary rights and interest in or connected with this publication shall vest in Euronext. No part of it may be redistributed or reproduced in any form without the prior written permission of Euronext. Euronext refers to Euronext N.V. and its affiliates. Information regarding trademarks and intellectual property rights of Euronext is located at [www.euronext.com/terms-use](http://www.euronext.com/terms-use)  
© 2021 Euronext N.V. All rights reserved.





# SPONSOR DIRECTORY

## Lead Sponsors

### Exactpro

Exactpro is a specialist firm focused on software testing of exchanges, clearing houses, depositories and other market infrastructures. We provide QA services for mission-critical technology underpinning global markets. Our clients are regulated by FCA, Bank of England and their counterparts from other countries. Exactpro applies a variety of data analysis and machine learning techniques to improve the thoroughness and efficiency of automated software testing executed under load. We also test platforms built with DLT, including R3 Corda.

Headquartered in the UK, with operations in the US, Georgia and Eastern Europe, Exactpro currently employs over 600 specialists.

Visit us at [www.exactpro.com](http://www.exactpro.com)

### Instinet

Instinet Incorporated, through its brokerage subsidiaries (collectively, "Instinet"), provides technologically advanced, agency-model brokerage services to institutional clients worldwide. As the wholly-owned execution services arm of Nomura Group, Instinet seeks to add value across the investment life cycle, providing: Research and Insights; Trading Services; Liquidity Venues; and Workflow Solutions. Instinet helps institutional investors create, protect and capture alpha, reduce complexity, and lower overall trading costs to ultimately improve investment performance. Over the course of its almost 50 year history, Instinet has been a pioneer in electronic trading, creating of an array of now industry-standard technologies and the world's first major electronic trading venue. For more information on how Instinet's commitment to being nimble and innovative helps clients every day, please visit [instinet.com](http://instinet.com)

### Itiviti, A Broadridge Business

Itiviti provides nearly 2,000 financial institutions worldwide with flexible, cross-asset trading solutions that cover the full trade lifecycle. Through its commitment to technology innovation, relentless pursuit of workflow efficiency and an entrepreneurial culture, Itiviti is disrupting the industry with highly-scalable solutions that deliver unprecedented cost savings for clients.

For more information, please visit [www.itiviti.com](http://www.itiviti.com).

Follow Itiviti on social media on Twitter @Itiviti\_AB, on Facebook @ItivitiAB, and on LinkedIn.

### London Stock Exchange Group

London Stock Exchange Group (LSEG) operates a broad range of international equity, ETF, bond and derivatives markets, including London Stock Exchange; Borsa Italiana; and Turquoise (a pan-European equities trading venue). Through its platforms, LSEG offers market participants, including retail investors, institutions and SMEs access to Europe's capital markets. London Stock Exchange trading services are designed to maximise liquidity for all participants and include fully electronic order-driven services for liquid UK and international Global Depository Receipts, and quote-driven market maker services for less liquid securities. With a single connection, investors can access securities from over 100 countries including developed as well as emerging markets.

[www.lseg.com](http://www.lseg.com)

### Virtu Financial

Virtu Financial is a global technology firm that provides transparent, end-to-end trading solutions. We empower our clients to achieve best execution by providing deep liquidity across asset classes and by leveraging technology to improve performance and reduce costs. Virtu delivers execution, analytics, liquidity and workflow solutions in 50 countries and provides liquidity in more than 25,000 securities on 235 venues in 36 countries. Visit [www.virtu.com](http://www.virtu.com) for more information

## Sponsors

### **BMO Capital Markets**

BMO Capital Markets is a leading, full-service North American-based financial services provider offering corporate, institutional and government client's access to a complete range of products and services. These include equity and debt underwriting, corporate lending and project financing, merger and acquisitions advisory services, securitization, treasury management, market risk management, debt and equity research and institutional sales and trading. With approximately 2,600 professionals in 33 locations around the world, including 18 offices in North America, BMO Capital Markets works proactively with clients to provide innovative and integrated financial solutions.

BMO Capital Markets is a member of BMO Financial Group (NYSE, TSX: BMO), one of the largest diversified financial services providers in North America with US\$760 billion total assets and nearly 43,000 employees as at January 31, 2021. For more information, visit [www.bmocm.com/](http://www.bmocm.com/).

### **BNY Mellon | Pershing**

BNY Mellon's Pershing is a leading provider of custody services and associated solutions for wealth and adviser firms.

With over \$2T\* in global client assets, safekeeping is paramount to our offering. We invest millions annually in market-leading technology and operational excellence so you don't have to. Our flexible offering covers all areas of the wealth management proposition, allowing you to focus on what is important to you—your clients.

### **Cboe Global Markets, Inc.**

Cboe Global Markets, Inc. is one of the world's largest exchange holding companies, offering cutting-edge trading and investment solutions to investors around the world. The company is committed to relentless innovation, connecting global markets with world-class technology, and providing seamless solutions that enhance the customer experience.

Cboe offers trading across a diverse range of products in multiple asset classes and geographies, including options, futures, U.S. and European equities, exchange-traded products (ETPs), global foreign exchange (FX) and multi-asset volatility products based on the Cboe Volatility Index (VIX Index), the world's barometer for equity market volatility. Cboe's trading venues include the largest options exchange in the U.S. and the largest stock exchange is one of the largest stock exchange operators in the largest stock exchange by value traded in Europe. In addition, the company is one of the largest stock exchange operators in the U.S. and a leading market globally for ETP trading.

The company is headquartered in Chicago with offices in Kansas City, New York, London, Amsterdam, San Francisco, Singapore, Hong Kong and Quito, Ecuador. For more information, visit [www.cboe.com](http://www.cboe.com).

### **Espro**

Espro is a leading provider of enterprise tools for automated FIX testing, simulation of FIX venues, and automated certification of clients' FIX connectivity.

Espro ETP Studio enables regression testing of FIX APIs, ad-hoc testing of FIX gateways, and functional testing of systems that use other protocols, including ITCH, OUCH, Kafka, TIBCO, Informatica, Solace, and many others. Its companion applications, ETP R-Box and ETP S-Box, provide central management of test results and FIX specifications.

Espro ETP C-Box automated self-certification environment for FIX client connectivity removes the need for phone sessions, and it provides a centralized environment to store certification and FIX logs, including fulfilling requirements under MiFID II.

We are also the provider of GSP – the Global Simulation Package – a package of more than sixty pre-built FIX simulators for venues in North America, EMEA, and APAC, the provider of the popular online FIX Tools, and of automated testing for the Fidessa OpenAccess platform.

For more information, visit <https://espro.com> and follow us on LinkedIn.

### **Euronext**

Euronext is the leading pan-European market infrastructure, connecting local economies to global capital markets, to accelerate innovation and sustainable growth. It operates regulated exchanges in Belgium, France, Ireland, The Netherlands, Norway and Portugal. With close to 1,500 listed issuers worth €4.5 trillion in market capitalisation as of end December 2020, it has an unmatched blue chip franchise and a strong diverse domestic and international client base. Euronext operates regulated and transparent equity and derivatives markets and is the largest centre for debt and funds listings in the world. Its total product offering includes Equities, FX, Exchange Traded Funds, Warrants & Certificates, Bonds, Derivatives, Commodities and Indices. Euronext also leverages its expertise in running markets by providing technology and managed services to third parties. In addition to its main regulated market, it also operates Euronext Growth® and Euronext Access®, simplifying access to listing for SMEs. Euronext provides custody and settlement services through central securities depositories in Denmark, Norway and Portugal.

For the latest news, find us on Twitter ([twitter.com/euronext](https://twitter.com/euronext)) and LinkedIn ([linkedin.com/euronext](https://www.linkedin.com/company/euronext)).

For more information, please visit

<https://www.euronext.com/en>

### **FIS Trading Solutions**

What if your electronic trading solution could advance your growth?

FIS is the premier provider of high-performance cross-asset trading and risk infrastructure for the full trading life cycle. From order and portfolio management on the buy side to order management and execution on the sell side, our electronic trading platform is fully adaptable to your requirements.

And our broad capabilities can support parallel trading operations, single site, cloud enabled and remote trading.

No matter where you are in the world, you can trust our trading solutions to be fast, efficient and adaptable because they're backed by the world's leading fintech provider and our established best practices. Discover FIS – Accelerate growth with cross-asset electronic trading from FIS.

## Gatelab

Gatelab is a leading provider of SOR, trading & market access solutions to the global financial community. Gatelab offers scalable low-latency solutions to support market-makers, price-takers and brokers in pre-trade, trading and post-trade operations across venues of any asset class on premises or hosted. Gatelab has been servicing leading Exchanges, Investment Banks and Brokerage institutions for over 30 years supported from our offices in the United Kingdom and Italy.

Traderpath™ is Gatelab's leading multi-asset and multi-venue trading platform providing a high-performance framework for unified pricing and execution. Complemented by Algorithmicpath™, firms can seamlessly design, validate and deploy their trading, pricing, quoting and hedging models into production. The Exchangepath™ matching engine for SI/OTF/MTF enables users to test algorithms using live data feeds and execute across simulated markets which continuously emulate the corresponding actual markets. Regpath™ provides a MIFID II RTS-6 solution for disorderly market testing of trading algos.

## Linedata

Linedata AMP: Reimagine your asset management operations. Transform your business.

Whether you're an institutional manager, hedge fund or wealth advisor, Linedata's innovative Asset Management Platform – AMP – delivers all your business needs on a single platform to adapt nimbly to our changing world.

Cloud-enabled software, collaborative expertise with integrated data analytics, and the flexibility of our modular design enables better decision-making, streamlines processes, and empowers scale and innovation.

AMP leverages a new technology architecture with the latest cloud capabilities and features alongside robust core software for a seamless, enhanced user experience. You can adopt new features across the investment cycle with ease, for better integrations, performance, and scalability. A host of special features, including an intuitive trading user interface and web-based model management delivers value and drives growth, so you can reimagine your operations and respond to any challenge.

We are a global team of 1200 in 20 locations serving over 700 clients. Whatever is on your mind today, Linedata's award-winning service teams are ready to listen and help drive your business forward.

[Getinfo@linedata.com](mailto:Getinfo@linedata.com) | [linedata.com/AMP](https://linedata.com/AMP)

## Liquidnet

Liquidnet is a technology-driven, global institutional investment network that intelligently connects the world's investors to the world's investments. Since our founding in 1999, our network has grown to include more than 1,000 institutional investors that collectively manage \$33 trillion in equity and fixed income assets. Our network spans 45 markets across six continents and seamlessly connects institutional brokers, investment banks, exchanges, alternative trading venues, and a growing list of data and research providers. We built Liquidnet to make global capital markets more efficient, and continue to do so by adding additional participants, enabling trusted access to trading and investment opportunities, and delivering the actionable intelligence and insight that our customers need. Liquidnet Holdings, Inc. and its subsidiaries are part of TP ICAP Group plc. For more information, visit [www.liquidnet.com](http://www.liquidnet.com) and follow us on Twitter @Liquidnet.

## Nasdaq

Nasdaq (Nasdaq: NDAQ) is a global technology company serving the capital markets and other industries. Our diverse offering of data, analytics, software and services enables clients to optimize and execute their business vision with confidence. To learn more about the company, technology solutions and career opportunities, visit us on LinkedIn, on Twitter @Nasdaq, or at [www.nasdaq.com](http://www.nasdaq.com).

## SIX Swiss Exchange

SIX Swiss Exchange is the largest and most liquid trading venue for Swiss securities and the fourth-largest stock exchange in Europe by transaction volume. The high-performance trading platform for shares, bonds, ETFs, ETPs, and structured products offers proven reliability and security, even in times of highest volatility. We provide companies with access to highly capitalized Swiss and international investors, and the over 250 companies listed with us include Nestlé, Novartis and Roche which rank among the top five companies in Europe by market capitalization. The Swiss Stock Exchange – as well as the Spanish Stock Exchanges – are owned and managed by SIX

[www.six-group.com/swiss-stock-exchange](http://www.six-group.com/swiss-stock-exchange)

## Turquoise

Turquoise is the European multilateral trading facility majority owned by London Stock Exchange Group in partnership with 12 investment banks. With a single connection, members can trade shares, depository receipts, ETFs, and European Rights Issues of 18 European countries with an Open Access model that allows members to choose among 3 interoperable CCPs to clear these trades.

Investors can find liquidity via Turquoise innovations designed in partnership with our customers through two electronic order book services:

- Lit with Turquoise Lit™ and Turquoise Plato Lit Auctions™
- Dark with Turquoise Plato Continuous Trading™, Turquoise Plato For more information, please visit [www.tradeturquoise.com](http://www.tradeturquoise.com); or follow us on Twitter @tradeturquoise or LinkedIn on Turquoise

# THANK YOU TO ALL OUR SPONSORS

## LEAD SPONSORS



## SPONSORS



## TRADE ASSOCIATIONS



## MEDIA PARTNERS

OFFICIAL MEDIA PARTNER



# Join us and drive change

To find out more, please contact us at  
[fix@fixtrading.org](mailto:fix@fixtrading.org) or [www.fixtrading.org](http://www.fixtrading.org)

**FIX TRADING  
COMMUNITY™**  
INDUSTRY-DRIVEN • INDEPENDENT • NEUTRAL

FIX Trading Community is the non-profit, industry-driven standards body at the heart of global trading.

The organisation is independent and neutral, dedicated to addressing real business and regulatory issues impacting multi-asset trading in global markets through standardisation, delivering operational efficiency, increased transparency, and reduced costs and risks for all market participants.

Demonstrate your firm's commitment to FIX Trading Community by becoming a member of this unique organisation.