transforming global foreign exchange markets

# e-FOREX

e-forex.net **JULY** 2023

## FX LIQUIDITY MANAGEMENT
**Addressing the challenges of a seriously complex undertaking**

## A QUEST FOR THE BEST
**Exploring Singapore's increasingly attractive e-FX trading ecosystem**

## TECHNOLOGY AND AUTOMATION
**Bringing a new dimension to Emerging Market FX trading**

## CUTTING THROUGH THE HYPE
**Where AI is already making its presence felt in FX**

## LOOK AHEAD
**What are the current priorities for CLS?**

COVER INTERVIEW

# MICHAEL IDZKOWSKI
**DIRECTOR OF SALES, DMALINK AND DEFINITY MARKETS**

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Welcome to

# e-FOREX

transforming global foreign exchange markets

## July 2023

Our regional e-FX perspective feature in this edition is focused on Singapore. Its remarkable growth as a major FX hub continues to gather pace and it is now the third-largest FX trading centre globally and the largest in Asia, accounting for 9.5% of global FX volumes. There are a number of reasons why Singapore is so attractive for increasing numbers of FX trading firms including proactive and forward thinking initiatives by the Monetary Authority of Singapore (MAS) which have helped to convince primary inter-dealer platforms, MDPs, and liquidity venues to locate their matching, pricing, and trading engines in Singapore. FX trading technology is also going through a renaissance period in Singapore. Thanks to the direction and guidance from MAS, a wide variety of technology and digital currency projects are flourishing and there has been high-calibre talent inflow from the region, making Singapore even more relevant as a banking and fintech hub. Low latency has proved to be a critical building block for Singapore's e-FX growth. It has very strong digital connectivity and its infrastructure investments have ensured very low latency times between the city-state and other trading hubs which as we know is so important for many firms. The future prospects for e-FX in Singapore seem very bright indeed and we will be following developments closely.

With Artificial Intelligence now very much in the news, one of our Fintech features this month is examining how AI is continuing to make its presence felt in FX. The complexity of our market is a factor that makes FX an ideal environment for the use of AI with data analysis, liquidity management and risk management being just three obvious and powerful applications. There are risks of course in deploying AI which must be addressed and lessons that FX can learn about how the technology is being applied in other markets, but despite its transformative potential in FX trading, it seems unlikely it will completely replace human traders in the foreseeable future. But don't bank on it!

Next month is a busy one for our web development team who are launching our new FXAlgoNews and Institutional Digital Asset websites which we will tell you more about in September.

As usual I hope you enjoy reading this edition of the magazine.

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## COMPANIES IN THIS ISSUE









smartTrade Technologies provides end-to-end liquidity sourcing, trading, payments, and distribution capabilities across multi-asset class instruments.

# Capitolis to connect to LCH ForexClear's FX Smart Clearing solution

Capitolis has announced it is connecting to LCH's FX Smart Clearing solution. This will add another layer of optimization benefits to help banks overcome the challenge of increased costs resulting from the introduction of the Standardized Approach to Counterparty Credit Risk (SA-CCR) and other risk measures in the FX industry, particularly relating to FX forwards, FX swaps and cross-currency swaps. In a proof-of-concept with nine global banks, Capitolis demonstrated the benefits in capital and funding that FX Smart Clearing would provide to the company's existing SA-CCR optimization service. It reached a network yield of

Gil Mandelzis

42% of total funding costs including the funding of capital. "Combining FX Smart Clearing with our post-trade optimization technology is the ideal approach to managing capital for our customers," said Gil Mandelzis, CEO & Founder, Capitolis. "The relationship with LCH ForexClear, coupled with our network of participating global banks, is a sophisticated and advanced model for the industry, bringing multi-lateral optimization to the next level by including a clearing node."

# Raiffeisen Bank International adopts ION's messaging solution

ION, a global leader in trading, analytics, treasury, and risk management solutions for capital markets, commodities, and treasury management, has announced that Raiffeisen Bank International (RBI) has implemented ION's new ISO 20022 solution. A leading corporate and investment bank in Austria and Central and Eastern Europe (CEE), RBI selected the solution to help it meet the new TARGET2 and SWIFT CBPR+ ISO 20022 initiatives. ION's ISO 20022 technical messaging system helps users to navigate the transition seamlessly. Equipped with this solution, RBI can now process settlement requests both from ION's existing WSS FX and other back-office applications across the bank. Supporting the rich and

Eugene Markman

structured data in ISO 20022 messages, the new messaging hub will provide a more efficient end-to-end payments experience for RBI's clients. Eugene Markman COO of ION FX, said: "Through working with RBI on their ISO 20022 strategy for the past two years, we understand the challenges this new messaging format presents. Designed to address these concerns, our ISO 20022 solution will help RBI and other clients meet the new requirements, realize additional settlement opportunities, and pave the way for a more standardized, efficient payments landscape."

# DIGITEC makes two new hires in London

DIGITEC has announced that Errol McKenzie and Asim Ahmed have joined its London office. DIGITEC's London office includes staff with extensive industry experience across a range of different roles, including sales, customer service, product development, IT services and engineering. Errol McKenzie joins as Head of Customer Service and Success and reports to Stephan von Massenbach, Chief Revenue Officer whilst Asim Ahmed, who has joined as Service Level Manager, reports to Errol McKenzie. "As we continue to add bank clients and develop new products it is important that we provide the highest levels of support by investing in experienced and highly skilled people working in Customer Service and IT Services," said Peer Joost, CEO of DIGITEC. "Hiring for these roles in London brings us closer to our clients and new prospects, which is key to DIGITEC's future growth plans."


Peer Joost

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# Trading Technologies establishes new FX business line

Trading Technologies International, Inc. (TT), a global capital markets technology platform provider, has established a new FX business unit, TT FX, and appointed industry veteran Tomo Tokuyama to lead it. TT FX represents the firm's latest expansion into new asset classes, following its acquisition in March of AxeTrading, a leading global provider of fixed income trading solutions. Tokuyama will manage the new business line with initial focus on the hiring of other key talented FX industry product and technology experts, connectivity to major electronic communication networks (ECNs) and liquidity providers, and the delivery of advanced FX trading capabilities through TT's execution management system (EMS). Tomo Tokuyama said: "I have long believed that technology will continue to advance and shape the future of FX trading through greater focus on automation and data. I'm pleased to join a firm that not only shares that view but listens carefully to clients to deliver innovative tools and access to markets that traders and firms actually want. FX is in high demand by TT clients, and I'm excited about the opportunity to further shape the FX strategy and deliver a product that TT clients will be proud to use."

Tomo Tokuyama

# 4OTC partners with Quod Financial for Digital Assets trading

4OTC, the FinTech provider of connectivity services for Digital Assets and FX, has announced a strategic partnership with Quod Financial, the provider of multi-asset advanced trading solutions. This collaboration delivers an unparalleled trading solution for digital assets by bringing together 4OTC's robust API and extensive exchange and OTC connectivity with Quod Financial's advanced O/EMS platform. This partnership enables institutional clients to access liquidity from across the fragmented digital assets market and optimise their trading strategies. 4OTC's flagship product, 1API, is known for its ability to streamline connectivity across numerous digital asset exchanges and liquidity providers, and Quod Financial's award-winning platform combines adaptable algorithmic trading, smart order routing, internalisation of flows, and a comprehensive array of risk controls. Medan Gabbay, CRO at Quod Financial added, "Partnering with 4OTC is a strategic step forward. Their market-leading connectivity services, when combined with our adaptive O/EMS platform, provide our clients with unparalleled access to digital asset markets."

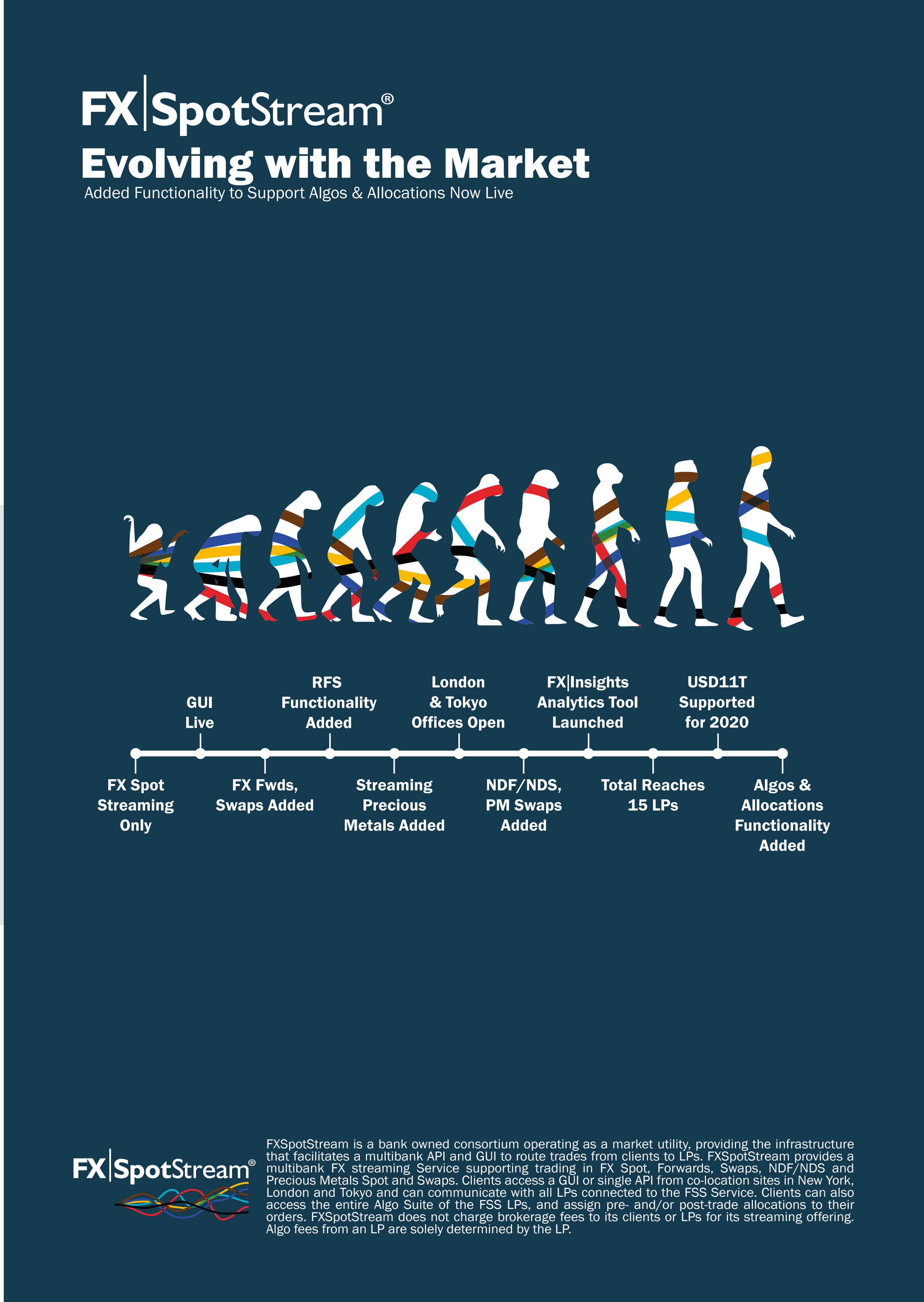
Medan Gabbay

# Finalto partners with Your Bourse

Finalto has signed with Your Bourse, a leading trade execution technology provider for the retail and institutional MT4/MT5 brokers, to offer Finalto liquidity directly to Your Bourse clients by distributing FIX Sessions from Your Bourse PaaS. Clients will connect to Finalto via YB FIX API Server. Clients who wish to connect their MT4 or MT5 directly can also do that using YB MT4 Bridge or MT5 Gateway. As an integral part of this partnership, Finalto will seamlessly distribute its institutional liquidity directly to Your Bourse clients through Your Bourse Platform. Paul Groves, UK B2B CEO at Finalto, said: "We have known the Your Bourse team for many years and seen the company grow and establish itself in a very competitive market. Finalto is always willing to work with partners who share the same beliefs in customer service, stable technology and fair pricing. We see the relationship with Your Bourse as important to our future plans and look forward in working together for years to come."

Paul Groves





# NetDania selected for Citi Velocity 3.0

NetDania, part of United Fintech has announced it has been selected by Citi to provide advanced charting and data visualisation on its platform, Velocity 3.0. "The Velocity OS was purpose built to allow for an ecosystem of partnerships; and we see our clients benefitting greatly from NetDania's rich data visualisation and advanced charting tools", said David O'Byrne, Global Product Head of FX Platforms and Distribution at Citi. As a leader in charting and data visualisation solutions for the financial industry, NetDania empowers institutional customers with innovative tools for optimal data analysis, decision-making and customer value creation. "NetDania provides high-performance charting and data management services. With our flexible Open API structure, we offer full customisation to meet diverse needs and we're very thrilled to bring these capabilities to Citi's Velocity 3.0 platform", says NetDania's co-CEO Rasmus A. Bagger.


Rasmus A. Bagger

# NEOFX sees strong demand for low-cost corporate FX services

NEOFX, the European low-cost FX provider for mid-sized companies, reports an increased interest from companies across Europe to cut FX costs related to import and export by using NEOFX's services. Managing Director NEOFX, Thomas Morten Jensen explains: "We have seen a massive surge in European companies coming to us for competitive FX rates because it leads to significant cost reductions and thereby improved profit margins for these companies."

NEOFX's customers use a secure online platform to conduct low-cost FX trading and make international payments, and the convenient access to extremely competitive FX rates is a good match for mid-sized companies. "Our proven services are widely used by exporters and importers across Europe" explains Thomas Morten Jensen and elaborates: "As a disruptive fintech we must have a real value-add to attract customers and ours is simply that we help reduce costs by providing better FX rates than the customers' bank, which leads to a significantly improved bottom line for our customers."


Thomas Morten Jensen

NEWS

# FYNXT partners with Centroid Solutions

A recent collaboration between FYNXT and Centroid Solutions represents a significant step forward in providing advanced technology solutions for Multi-Asset Brokers. The connection of Centroid's capabilities into FYNXT's Digital Front Office will empower brokers with the tools they need to efficiently manage their operations, enhance their trading capabilities, and ultimately drive their business success. Commenting on the partnership, FYNXT's CEO, Aeby Samuel said, "We firmly believe that this collaboration will bring significant benefits to our existing and potential clients. In addition to our digital front office, brokerages require a real-time risk management system and a robust network infrastructure that can support high-frequency trading while maintaining low latency and unwavering stability." Meanwhile Centroid Solutions CEO, Mr. Cristian Vlasceanu, commented: "While our clients are leveraging our expertise in building their low latency network infrastructure (through our Centroid Hosting solution) and connecting to multi-asset LPs and trading platforms (via our Centroid Bridge connectivity engine), they can now take advantage of this partnership to gain access to FYNXT's powerful solution to effectively manage and enhance their customer experience. We are excited to be working closely with the FYNXT team to empower and bring additional benefits to our customers."


Cristian Vlasceanu


Aeby Samuel



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# IPC partners with CryptoStruct

IPC Systems, a leading provider of secure, compliant communications and multi-cloud connectivity solutions for global financial markets and CryptoStruct, a major low latency cryptocurrency market data and trading solution provider, have joined forces to offer enterprise-grade data to IPC's Connexus® Crypto ecosystem. Connexus Crypto allows market participants to buy and sell cryptocurrency simultaneously in different markets. The solution also provides users with low latency connectivity and instant access to the liquidity of several global crypto exchanges. CryptoStruct provides an all-in-one trading solution including highly accurate, normalized, low-latency market data from global crypto exchanges and comprehensive tick histories nano-second time-stamped in colocation for all supported markets. "With CryptoStruct joining the IPC ecosystem, our customers will now benefit from a suite of low-latency market data feeds, specifically for the crypto asset class. This is an exciting addition and expansion from our recent announcement with Celoxica, which cements our position as collaborating with best-of-breed providers in the low-latency electronic trading arena," said Alex Walker, VP Global Network Data Sales, IPC Systems.


Alex Walker

# Skale integrates with CMC Markets Connect

Skale has integrated its enterprise-grade CRM and client portal for forex brokers with CMC Markets Connect's multi-asset trading solution for institutional clients. The integration, driven by client demand, provides CMC Markets' clients with access to Skale's fully customizable back office, CRM, multi-layered IB portal and traders' area. With enterprise-grade performance and security, Skale's platform is pre-integrated with the FX market's leading plug-ins including trading platforms, payment service providers, KYC tools, marketing tools and business intelligence tools. Ahmed Soliman, Head of Institutional Sales & Account Management Middle East at CMC Markets said: "We are delighted to have integrated with Skale and incorporated them into the Connect platform. This recent partnership will allow our clients, especially our white label relationships, the ability to scale their business further by streamlining operational requirements. Recently regulated in Dubai, we are thrilled that our first client to use Skale technology will be based out of the region." David Nussbaum, Founder & CEO, Skale added, "This integration builds on our strategy of integrating with market-leading trading platforms, extending our global reach. CMC Markets is recognised worldwide as an industry leader and we are thrilled that their institutional clients can now benefit from accessing our robust, flexible and secure platform which integrates all the tools they need to manage their trades, automating business processes and driving operational efficiencies."


David Nussbaum

# Advanced Markets joins forces with Brokeree Solutions

Advanced Markets, a leading provider of institutional-grade foreign exchange liquidity, technology, and credit solutions, and Brokeree Solutions, a developer of turnkey technology solutions for multi-asset brokers, have announced an important integration which connects Advanced Markets' liquidity services with Brokeree's Liquidity Bridge. The integration facilitates brokers utilising MetaTrader 4, MetaTrader 5, and DXtrade trading platforms to access the advanced liquidity management technology of Liquidity Bridge, and the expansive liquidity pool offered by Advanced Markets at the same time. Commenting on the venture Anya Aratovskaya, VP Institutional Sales at Advanced Markets, says that, "We are delighted to partner with Brokeree Solutions and merge our Prime-of-Prime Liquidity with their innovative Liquidity Bridge. This collaboration will permit brokers to seamlessly enhance their clients' trading experiences. By combining our strengths in liquidity provision and technology, we aim to empower brokers with greater flexibility, efficiency, and reliability, in trade execution and risk management."


Anya Aratovskaya

NEWS




# A Look Ahead

After describing some of the recent investments in technology his organization has been making, Marc Bayle de Jessé, CEO of CLS, outlines what its priorities are going to be over the coming year and what lies in store for the industry.

Marc Bayle de Jessé



**As you approach your fourth year in the role, what have been the highlights of your tenure thus far?**

I joined CLS in December 2019, just as the COVID-19 pandemic was beginning. It was a challenging time, and we had to adjust our working model overnight. However, I was fortunate to be part of a team that was able to adapt quickly and effectively. Despite the market volatility that followed and a sharp increase in CLS volumes (approximately 20% higher than average in March 2020), we continued to deliver robust services to the FX market every day.

During this time, we continued to invest in our technology to enhance our services capacity. We completed a significant phase of our multi-year technology investment program – Convergence – to migrate CLSSettlement to the Unified Settlement Platform (USP). Convergence went live in June 2021; and as a result CLS has one of the most sophisticated, resilient, scalable and flexible post-trade technology platforms across global financial market infrastructures (FMIs), which enables us to develop our services more easily to meet the requirements of an evolving FX ecosystem.

The growth of PvP settlement volumes and the CLSSettlement community has also been a real highlight. Since I joined, we have experienced a 10% increase in volumes, settling an average of USD6.5 trillion per day in 2023. This upward trend is of particular importance to me given CLS's purpose is to mitigate settlement risk in the FX market.

We are also proud of the growth of CLSSettlement, primarily driven by the asset manager community. Over the past three years, we have seen a remarkable 25% rise in the number of entities from around the globe settling through CLSSettlement via our settlement members, representing about 35,000 banks, funds, non-bank financial institutions, multinational corporations and other third-party participants. Notably, almost 80% of the top 250 investment managers are now settling through CLSSettlement via their custodian banks.[1]

The increasing awareness of settlement risk in emerging market (EM) currencies and the collaboration between the public and private sectors to resolve it have also been noteworthy. This is a great example of how the FX industry constantly seeks to evolve by identifying issues and exploring solutions. As the FMI at the center of the FX industry, we take pride in being a part of these collaborative efforts.

**What are the biggest challenges you have faced in your role thus far?**

I see three main challenges: first, to clearly identify areas in the market where settlement risk still exists and find ways to mitigate it further; second, to find concrete solutions for EM currencies; and third, to ensure operational excellence.

CLS's role is to help the FX industry find solutions to industry challenges while maintaining the highest operational standards. One of the key challenges is demystifying the scope of settlement risk across a participant's FX trading portfolio. To tackle this, we collaborated with a subset of our members and analyzed trading activity to determine how their trades were being settled. This analysis provided valuable insights into how market participants manage settlement risk and the various settlement mechanisms they employ. Our analysis showed that of their CLSSettlement-eligible transactions (which comprise approximately 80% of the total global FX market according to the 2022 Bank for International Settlements (BIS) survey), on average 51% of the traded notional is settled through CLSSettlement, while much of the remainder relates to inter-branch and inter-affiliate trades (35%) and trades that settle over accounts within the banks' direct control or via a single currency cashflow (together, 8%). This leaves around 6% of trades exposed to FX settlement risk that are eligible for CLSSettlement, and we are confident we can help address these volumes.
Rising settlement risk in EM currencies is an industry challenge we are looking to tackle. Adding currencies to CLSSettlement requires ongoing support from the relevant central bank and can require changes in the target jurisdiction's laws. Given these challenges, we are focusing our efforts on addressing this issue by enhancing CLSNet, our standardized, automated bilateral payment netting calculation service across 120 currencies. CLSNet reduces payment obligations exposed to settlement risk while improving operational and liquidity efficiencies. The good news is that a significant proportion of the interbank transaction flow through CLSNet is in the deliverable EM currencies that pose the most settlement risk for our settlement members.

As an FMI, ensuring the resilience of our operations has been a key priority for me and the team. In the face of market instability caused by current macroeconomic conditions, we have made significant efforts to maintain operational excellence. This has involved not only technology investment, but also an ongoing program of work across our operational functions, as well as the engagement and support of our settlement members to ensure they have taken all the necessary measures to protect themselves as part of the broader CLS ecosystem.

Robust risk management is critical to operational resilience. CLS's risk management framework is based on a robust and integrated approach that considers all relevant risk including credit, market, liquidity, operational, legal, compliance and reputational risks. As a global FMI, we must adopt both sophisticated and flexible risk management practices that can adapt to risks originating from financial market fluctuations. As part of our ongoing efforts, we continuously enhance our risk management frameworks, policies, and procedures to ensure their effectiveness. This involves identifying, assessing and managing risks, while also strengthening the risk culture within our organization. We remain committed to working closely with our key stakeholders in this critical area.

**What are the priorities for CLS going forward?**

Beyond addressing FX settlement risk through increased adoption of CLSSettlement, continuing to drive the momentum behind CLSNet is a key focus. Over the past year, CLSNet has experienced very rapid growth and now includes eight of the top 12 global banks. We anticipate that this trend will continue. In Q1 2023, the service recorded a year-on-year increase of over 400% in the average daily volume of net calculations, and in June 2023, it hit a record peak of USD306 billion.

Another priority is educating relevant stakeholders about the importance of mitigating settlement risk. We aim to ensure that market participants are aware of our ancillary services that deliver risk mitigation for various FX products, such as our cross-currency swap service. Participation in this service increased in 2022, with a 60% year-on-year increase in the value of cross currency swap trades processed in Q4 2022.

As the critical service provider to the FX market, we uphold the highest levels of operational resilience above all else – across infrastructure, controls and cybersecurity. We have invested significantly in the technology underpinning our services, and maintaining these unparalleled levels of operational resilience will continue to be our top priority.

**What do you think will be the big themes in the FX industry for 2024?**

The countdown has begun for the transition to T+1 securities settlement in the US and Canada. This change will have implications for the FX industry, as the FX component of cross-border securities transactions will need to be settled before the security. CLSSettlement can support the trade flows resulting from a move from T+2 to T+1. However, time zone and/or operational constraints may require some cross-border market participants to accelerate FX execution to secure the necessary liquidity. We established a dedicated advisory group to address this issue and are actively engaging with our settlement members and relevant industry bodies. We are also exploring the potential impact it might have on same-day settlement activities and whether and how to adapt our services accordingly.

Another pressing concern for the FX industry is the implementation of the Standardized Approach for Counterparty Credit Risk (SA-CCR).[2] We are currently working with our settlement members and central counterparties to determine the best ways to support them in optimizing capital for the transition to the new rules.

Finally, according to recent research conducted by the BIS, 93% of the global central banking community is exploring digital versions of their currencies. Undoubtedly, this will continue to be a big theme in the coming year. If and when CBDCs are implemented by one or more major central banks, market infrastructures will probably need to be adapted to become accessible to wholesale market participants, and thus impact CLS as well. We have established an innovation lab to follow and support these initiatives where relevant to CLS.

To better understand FX market challenges, we have introduced a series of whitepapers to raise awareness and understanding of settlement risk and offer insights on key industry developments. Read more from our Shaping FX series, available at https://www.cls-group.com/insights/shaping-fx-ecosystem.

[1] Excluding Chinese-based investment managers

[2] SA-CCR applies to over-the-counter (OTC) derivatives, exchange-traded derivatives and long settlement transactions. https://www.bis.org/basel_framework/chapter/CRE/52.htm

Image by Shutterstock

# FX Liquidity Management:

## Addressing the challenges of a seriously complex undertaking.

**Nicholas Pratt examines how the role of the FX liquidity manager has evolved and in what ways technology will be a critical component in the next generation of FX Liquidity Management tools and services**

FX Liquidity Management continues to be a challenging and complex task as more trading styles, execution venues, platforms, liquidity providers and market makers enter the market. This is not a new development. A cottage industry of liquidity management providers and services has emerged as a result, designed to give market participants a chance to keep up. The question is whether the solution providers are able to keep up and where both the technology and trends in liquidity are heading.

"FX Liquidity Management is likely to remain complex but new technology is helping more participants to access solutions that give them a competitive advantage as they manage access to the largest and most electronic financial market," says Stephen Totten, director of quantitative analysis at oneZero.

### ARTIFICIAL INTELLIGENCE

He highlights the potential impact of artificial intelligence (AI). "AI is set to transform a sector that is already benefiting from sophisticated execution algorithms and increasingly quantitative analysis for both pre- and post-trade liquidity management, for example. And traditionally voice areas in FX, such as NDFs and swaps, are also seeing a huge amount of innovation from new entrants and novel offerings on existing platforms. That makes access to a neutral third-party technology partner with the ability to help manage a range of products and liquidity at scale in highly volatile FX markets more important than ever," says Totten.

At the same time, the role of the FX liquidity manager has evolved, says Totten. "It is no longer enough for FX liquidity managers to simply quote tight spreads - which is hard enough anyway in the volatile currency markets seen since the end of the zero rates era. Skew sensitivity, skew leakage and analysis of market impact are all vital factors to evaluate for both makers and takers to achieve the best execution."

oneZero has developed a range of tools to measure skew effectiveness and automatically identify clients with high market impact to help liquidity managers allocate their time and resources to the areas where they can make the largest impact, underlining why technology has become so important to the FX Liquidity Management process, says Totten.

**"AI is set to transform a sector that is already benefiting from sophisticated execution algorithms and increasingly quantitative analysis for both pre- and post-trade liquidity management, for example."**


Stephen Totten

"The sheer volume of market data and the growing number of market participants mean that it is now impossible to function without advanced analytics. At oneZero we are currently seeing 2.5x the data that we were just 18 months ago, for example. We regularly handle over 10 million transactions a day and averaged more than 9 trillion of quotes a month last year and data volumes are set to rise further," he says.

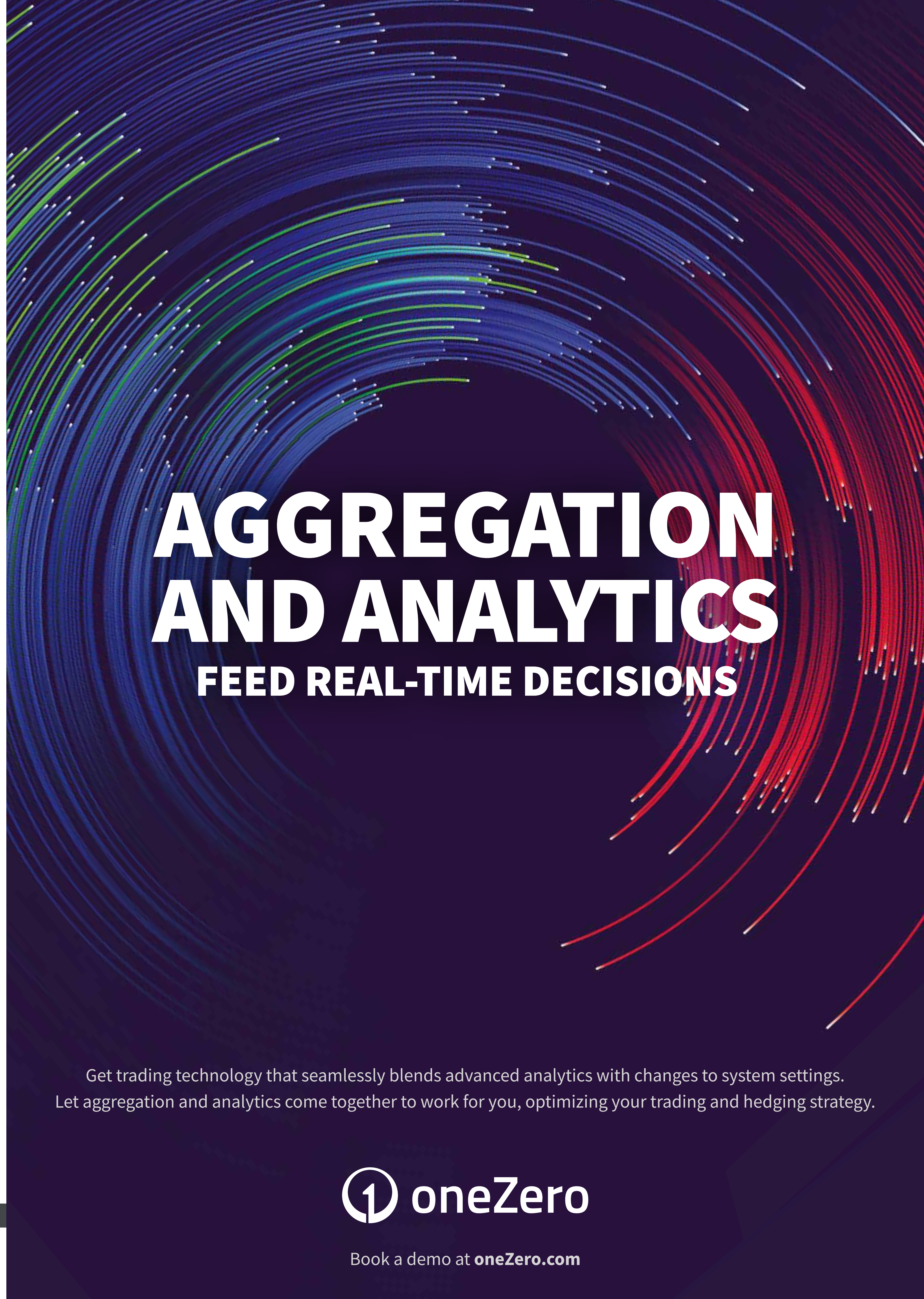
"Some market players are struggling with this, so having a technology stack that can handle scale is absolutely crucial. Apart from regulatory needs that are non-negotiable, liquidity managers can also use new analytical tools to adjust to market conditions more quickly, which drives customer revenues and delivers quantifiable dollar benefits. Data analytical tools are already the only way to tackle most of the key challenges facing FX liquidity managers. And AI is set to speed the pace of progress in helping technology solutions evolve to give liquidity managers an advantage over their competitors," says Totten.

It is also useful for FX trading firms to try to audit their existing FX Liquidity Management activities, says Totten. "Every FX firm needs to audit its liquidity management outcomes and plan for improvement. If an ECN or a bank price maker has a key goal such as winning a higher wallet share or reducing market impact, then that has to be measured, for example. And if the goal is not met then the liquidity manager needs to understand what has happened and why."

Despite all the talk of technology, relationships are vital in FX Liquidity Management and Totten believes that the right use of technology can improve rather than detract form that relationship. "Technology doesn't displace relationships in FX Liquidity Management, it enhances their efficiency. Faster transmission of data, interactive feedback on new liquidity pools or order types and greater use of quantitative metrics all help FX liquidity managers to do their job better."


Technology doesn't displace relationships in FX Liquidity Management





**"Platforms that provide centralised access to liquidity must be flexible and scalable enough to support bespoke pricing for each client and allow the LPs to provide a tailored pricing stream to meet their requirements."**

Henry Durrant

Technology will also be a critical component in the next generation of FX Liquidity Management tools and services, says Totten. "AI is coming to FX Liquidity Management, and at oneZero we are finding new ways to uncover patterns and improve efficiency for our clients. We also already have a tool called Maker Pool Replay that is proving popular with our clients. By combining our own data with the trading history of our clients we let them see what would happen to their PnL and trading statistics if they added or removed a specific pricing stream. Simulating orders against alternative liquidity pools can therefore be used to optimize the liquidity supply chain and improve decisions," says Totten. "Because of the sensitivity of trade data this is another area where a neutral third-party technology partner can add enormous value - and help FX liquidity managers to exploit the coming boom in AI solutions."

## FULLY DISCLOSED TRADING

Historically, liquidity management was viewed as an undertaking exclusively of anonymous ECN trading platforms with the onus on the ECN liquidity managers to effectively match different participants flow profiles together, says Henry Durrant, head of business development and liquidity management at Reactive Markets. "In recent years, the FX market has seen a seismic shift away from anonymous ECN trading to fully disclosed, bilateral trading setups ultimately with the same participants. This shift has been driven by an increasingly data driven approach to profit and loss generation and an industry-wide recognition of the risks of information leakage, both through the distribution of pricing skews for streaming LPs and signalling risk resulting from passive order placement on order books. Trading via disclosed relationships removes a lot of this uncertainty and risk as well as providing the ability for a fully bespoke trading setup between the client and LP."

With this growth in disclosed trading the challenge for clients then becomes finding a scalable technology solution to access all these trading relationships in one place, normalising not only the trading connectivity but also a single source of data and analytics for effective liquidity management, says Durrant. "This has created an opportunity for service providers like Reactive Markets to reduce complexity for clients and in turn enhance the trading relationship between LP and client through actionable liquidity management data and analytics."

Despite the evolution of the liquidity manager's role, the fundamental goals remain the same - to optimise the liquidity pool to source the best liquidity and improve execution quality across the full range of instruments, time zones and market conditions, says Durrant. "How a liquidity manager performs this role, however, has evolved from a legacy manual and often subjective approach to a fully quantitative and automated one. The role now demands a level of proficiency in data science combined with the market knowledge and context to apply this and effectively communicate with clients," he says.

"The role of the liquidity manager within our clients has also evolved, where we observe clients taking a much more active role in analysing their liquidity pool and ensuring each of their liquidity relationships are adding meaningful value to their stack. Traditionally this engagement would have been in the form of a static point in time review of the last month or quarter's performance across a series of high level metrics. What we are seeing now is a more dynamic, involved and granular process with clients constantly evaluating trends and changes in their liquidity pool, taking action as frequently as intraday if required."

The liquidity management process has also become increasingly data-driven and quantitative and therefore more reliant on technology, says Durrant. "Technology is simply the only way to make this happen. Specialist data platforms need to ingest and store billions of data points per day. Quantitative models need to sample this data and distilled down into useful, digestible business information. Ultimately, technology does the heavy lifting and allows the liquidity manager to spend their time analysing results, drawing conclusions and planning actions rather than performing the analysis itself."

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**"When you add a new LP there is trading documentation and credit agreements to sign, integration work to be done and APIs to be used, and much more. It is a complex exercise that takes time and money and success cannot always be guaranteed. This should no longer be the case."**

Guy Hopkins

into the behaviour of each, says Durrant. "It will slice this data across any axis that the liquidity manager desires providing the ability to understand exactly how each instrument and liquidity provider performs at any time of the day and under different markets conditions. It will clearly identify trends in the data in a timely manner so liquidity management is no longer consigned to a quarterly review but can instead have daily, or even real-time, visibility. The benefit of this will clearly differ from company to company but we have clients who have saved millions of dollars on execution costs by optimising liquidity so the benefits are very clear."

"Such platforms are not cheap or easy to build and maintain. Fortunately, the advances in cloud infrastructure for elastic compute and storage along with the availability of cheaper time-series databases have made building and accessing data platforms easier than the once were. Building a full in-house liquidity management platform, however, is still a major undertaking that should not be taken lightly. There are some excellent third party providers in this space and many execution platforms offer such a service. Liquidity management is central to the offering at Reactive Markets and we have invested heavily in this technology for our clients."

Effective liquidity management also requires the ability to quickly action decisions in order to change the shape of the liquidity pool, says Durrant. "Consequently, a firm's technical connectivity strategy must be agile enough to support these changing requirements. Similarly, platforms that provide centralised access to liquidity must be flexible and scalable enough to support bespoke pricing for each client and allow the LPs to provide a tailored pricing stream to meet their requirements."

## IMPORTANT METRICS

Clients are becoming more selective and deliberate about how they construct a pool of LPs, focusing less on the explicit number of LPs and more on the value each LP brings to the table, says Durrant. "Metrics such as market impact and rejection cost provide insights on overall cost of execution across counterparties, whilst pricing insights such as the percentage of time at top of book and spread comparisons versus a benchmark give clients a clearer picture of the current and potential value of these relationships."

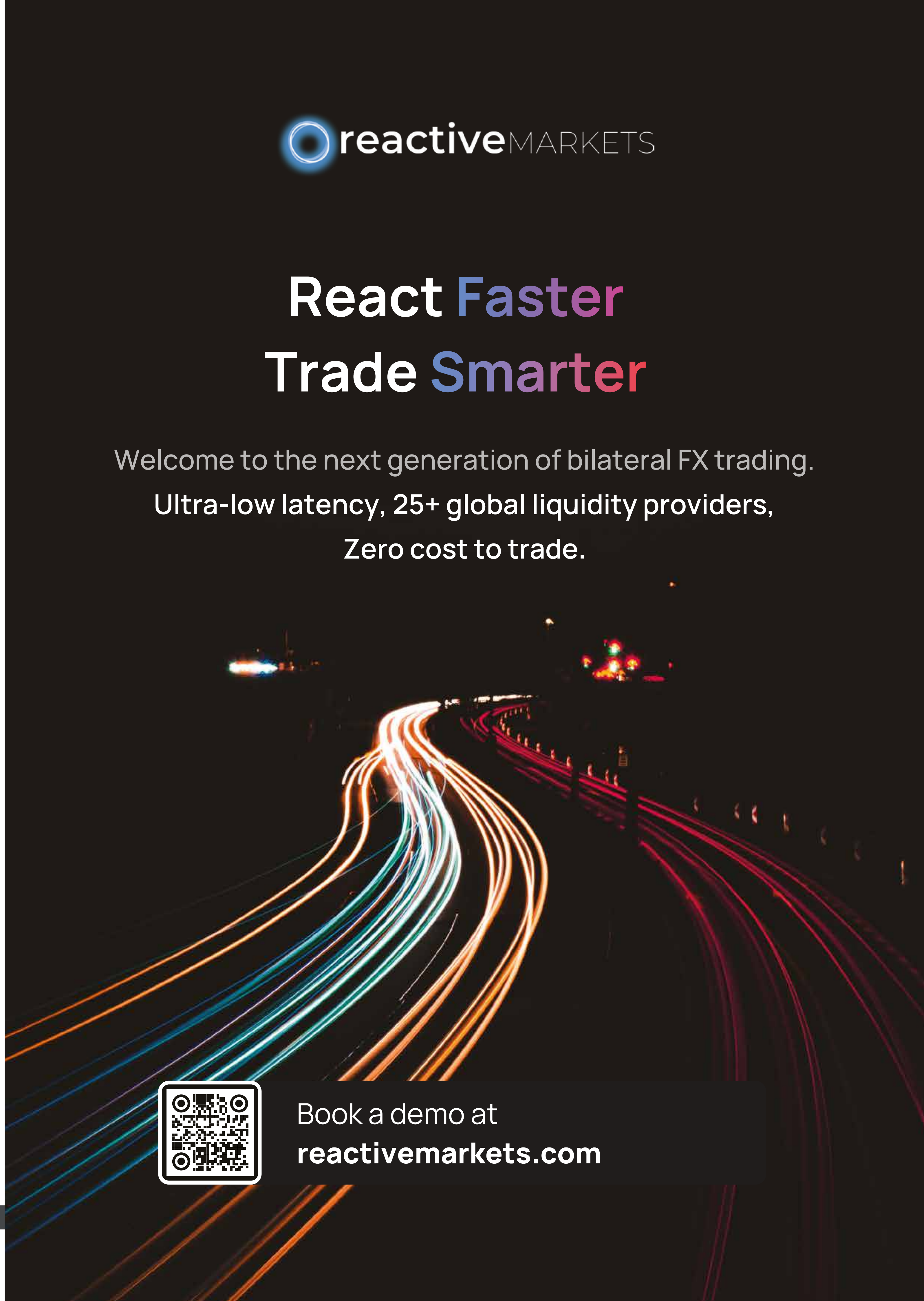
This selectiveness also makes the auditing of FX Liquidity Management a more useful process, provided firms know who to achieve this benefit, says Durrant. "The benefit of an active liquidity management process should be clear. In its absence pricing quality and performance will often deteriorate over time. The hidden costs of trading in the spread and costs of rejects will inevitably increase and reduce execution performance. Opportunities to include specific LPs that can add value to areas of the liquidity pool may be missed."

Once a firm has decided that liquidity management is valuable, it is important to put in place a consistent process that is performed regularly, says Durrant. "They should have a clear idea on the design of their liquidity pool including the numbers and types of LPs they would like in that pool. Once they have the pool in place it is important to have a good understanding of how they will measure the performance of the LPs and the relative costs and benefits that each brings to the pool. For example, having a view of the costs of rejects can be as important as an overall spread number. Armed with the quantitative data, a regular discussion with the active LPs should be scheduled."

In order to drive this process, the firm needs access to the data and analysis insights, says Durrant. "If they can't access it themselves then there are a number of third party providers who can help with this function. Indeed, there is often additional benefit with going externally as the providers will often have access to information that is not publicly available or available to the firm; for example, reference mid rates that can benchmark LPs or access to LP data that the firm is not currently trading with."

Relationships continue to be at the heart of liquidity management, says Durrant. "Building a trusting relationship with open dialogue between counterparties is key to a symbiotic pricing setup that works for all parties involved. Regular active





FX Liquidity Management: Addressing the challenges of a seriously complex undertaking

It is no longer sufficient just to be eyeballing spreads on a GUI or relying on a quarterly market share report

conversations between liquidity takers and liquidity providers keeps these relationships fresh, builds this trust and gives an opportunity to align concerns."

Companies also understand the importance of liquidity management to optimise their execution quality and costs, says Durrant. The new generations of liquidity management tools bring the data and analysis that were not readily available to the masses directly to the end customer. Aided by the elastic nature of cloud computing, these platforms are doing this in the face of increasingly market fragmentation and a massive growth in data availability, he says.

"We have already started to see a number specialist companies offering liquidity management as a service which makes accessing liquidity management insights and information much easier. These companies have access to a much broader range of data so a firm's performance can be benchmarked against the market. This is not without its challenges, however, and the predominately bilateral nature of the FX markets make capturing and sharing of a firm's bespoke pricing data an issue," he says. "Of course, it is impossible to talk about data and analytics without mentioning the potential of AI to supplement and accelerate the tools of the future. Given the rapid expansion and innovation in the AI space this is bound to play an important role in the next generation FX Liquidity Management tools."

### TECHNOLOGY ADVANCEMENTS

According to Guy Hopkins, chief executive and founder of FairXchange, liquidity management is becoming more complex because of ongoing fragmentation but it is balanced by the advancements in technology. "There will always be new platforms, new liquidity providers and new ways to execute but that is offset by the advent of liquidity management software that enables you to assess all of those options. We help firms to understand the impact of changing your liquidity environment," he says. "When you add a new LP there is trading documentation and credit agreements to sign, integration work to be done and APIs to be used, and much more. It is a complex exercise that takes time and money and success cannot always be guaranteed. This should no longer be the case. It should be much easier to add and assess new LPs. This is as important for LPs or venues selling their services as it is for takers; both sides need to know whether a relationship is likely to be worth consummating"

"One change we have seen in recent years is the greater number of firms that have appointed liquidity managers to take responsibility for the process. In some firms it is a full-time dedicated role. Others have liquidity management departments. But even though it is a specific role, it can vary depending on the entity and its trading objectives," says Hopkins.

"For example, an ECN will have a different approach to liquidity than a macro hedge fund in terms of centralised dealing desks or automation. There may even be different trading entities and styles within the same organisation. So liquidity management can be




a completely different process depending on the type of organisation, and who is having the conversations with LPs."

What is increasingly clear across the FX market, is the impact that liquidity can have on a firm, says Hopkins. "Liquidity management has become both more complex and more important. For example, there are new ways of trading (some firms have replaced sweeping with full amount execution styles) and a liquidity manager has to be able to assess the impact of that change. Sales teams at liquidity providers (both banks and non-banks) also now spend far more time talking about liquidity and execution than they used to, as opposed to the traditional model of solely discussing directional market moves and macroeconomics. This is reflected in the significant appetite on the buy-side for this type of information, the importance of which in many cases outweighs that of more traditional types of content supplied by the sell-side."

All of these questions are unanswerable without technology; it is no longer sufficient just to be eyeballing spreads on a GUI or relying on a quarterly market share report. Liquidity management technology is an ongoing exercise, and hugely important as the counterbalance to the growing complexity of liquidity, says Hopkins.

In terms of AI, a lot of the problems with liquidity management are multi-dimensional so are very suited to machine learning (ML), says Hopkins. "There are many areas where ML can have a lot of value. However model explainability is key - the ultimate objective is to understand liquidity and to increase transparency. If you come to rely on complex ML models that are effectively black boxes as the basis for your liquidity management approach, the danger is that you are just moving the complexity from the trading process to the measurement process."

That said, there are only so many ways that FX can be traded. Algos introduced a new way of trading but also brought more visibility into the market. And the changes to last look are good examples of how the technology has evolved. Another example of the evolution of liquidity management is the greater use of liquidity audits and using data analysis to better understand how to use and rotate a panel of liquidity providers.

When it comes to the next generation of liquidity management solutions, Hopkins identifies three phases of the process – measurement (what does my liquidity look like?); simulation (what would happen to my liquidity under certain conditions?); and optimisation (what is the best outcome?)

"The much longer-term objective will likely be to take the results of those simulations and feed them into execution systems and then automate that process and create a closed-loop circuit," says Hopkins. "The sell-side is already making those adjustments in how they manage the liquidity they distribute to their clients, and it is inevitable that this will start to happen on the buy-side. At some stage, the solutions also have to go beyond explicit transaction cost measurement to include factors like the cost of capital or the cost of clearing so that you have a more complete picture of liquidity and the associated costs."



# Quest for the best:
## Exploring Singapore's increasingly attractive e-FX trading ecosystem

Vivek Shankar

REGIONAL E-FX PERSPECTIVE


Image by Shutterstock

**"Singapore is very well placed compared to most other large financially developed cities in Asia, on two fronts – latency and low to no ecological disruptions,"**

Lee Beng Hong



Singapore's growth as a major FX hub in Asia continues unabated. The BIS Triennial Survey released in 2022 reported that average daily trading volumes rose to $929 billion (USD), an increase of 45% from April 2019. Singapore is now the third-largest FX trading centre globally and the largest in Asia, accounting for 9.5% of global FX volumes.

"Singapore is a regional hub for innovation in fintech and has a rich history of fostering an environment that enables progressive change in the industry," says Adrian Rymill, Head of eFX Sales APAC at State Street Global Markets. "Geographically, we are at the epicentre for the broad region from Tokyo and Wellington in the east, to Mumbai and UAE in the West. Whilst the share of business dealt electronically continues to increase, nothing replaces the value of being able to travel to get in front of clients to deepen relationships and understanding."

In addition to geography, the Monetary Authority of Singapore's (MAS) initiatives have played a central role in Singapore's growth. Launched in 2018, the Foreign Exchange E-trading Ecosystem strategy enticed banks to set up pricing, trading, and matching engines in the city-state.

The initiative has clearly worked, with the likes of Barclays, Deutsche Bank, and JP Morgan Chase among the banks that have set up operations in Singapore.

Lee Beng Hong, Head of Fixed Income, Currencies and Commodities, SGX Group, notes another critical aspect of Singapore's geography. "Singapore is very well placed compared to most other large financially developed cities in Asia, on two fronts – latency and low to no ecological disruptions," he says. "MAS has been a forward-looking and welcoming regulator, both in terms of providing a framework and support if required, for financial institutions and market infrastructure providers looking to set up technology infrastructure in Singapore."

## GROWTH INFRASTRUCTURE AND TRADING PATTERNS

Gareth Bridges, Director, Financial Services, Asia-Pacific at Equinix, echoes Rymill's views when asked about Singapore's attractiveness as an FX trading hub. "Singapore is the primary market for foreign exchange (FX) and bond price discovery in Asia-Pacific," he says. "Spot trading accounted for just ~25% of Singapore's total FX trading volume, with a significant volume of the overall growth contributed by FX derivatives. FX market participants utilise reliable, low-latency interconnection at Equinix to enable quick, secure, and direct access to key FX trading infrastructure."

Low latency has proved a critical building block for Singapore's eFX growth. Strong digital connectivity and infrastructure investments have ensured low latency times between the city-state and other trading hubs. In turn, these initiatives have attracted several stakeholders in FX, creating an ecosystem institutions can rely on.

SGX Group's Lee notes that infrastructure investments have significantly contributed to low latency times and Singapore's position. "Over the last 10 years, investment in infrastructure – hybrid cloud services enablement, data centres, colocation, hardware have all grown immensely," he says. "These have allowed Singapore to evolve into a hive of price discovery, helping to bridge trading across the Asian, European and American time zones."

Combined with the rise of cloud-based trading technology, Singapore's infrastructure investments have paid off handsomely. Rymill offers

Adrian Rymill

**"The CFTC approval of Recognized Market Operators authorised within Singapore as exempt from CFTC swap execution facility registration requirements speaks volumes to the confidence in Singapore,"**



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> **"Today, Singapore's status as an FX hub is facilitated by the presence of leading FX firms that have launched trading engines with Equinix's SG1 data centre,"**

Gareth Bridges

an example of how technology is playing a role in trade facilitation. "Traditionally execution traders have had to ask levels or "indicative pricing" from their sales coverage to gauge potential interest and axes for less liquid business they must execute," he says. "The increasing sophistication of eFX pricing means that eCommerce can function as a window into the broader franchise and an entry point for dialogue about larger or more complex risk." Despite the rise of e-trading, Rymill notes that effective service tailors itself to client needs. "In our e-FX business, we partner hand-in-glove both with our clients externally and traditional voice sales coverage internally," he says. "To facilitate a high service level, it's essential to hold regular dialogue with clients of all sizes about their execution activity and how it relates to both their investment and execution processes."

"Especially how eFX and algo execution fit into those processes to the benefit of asset owners," he continues. "Our voice sales make sure eFX sales are at those meetings so that our clients have someone who can speak fluently to the complete eCommerce offering."

Lee points out the broader technological advances are finding their way into client demands and service offerings. "We have seen a general rise in demand for execution platforms with embedded AI," he says. "Another feature that is being developed in the industry is a text-based algo tool that makes trading easier for clients trading both OTC and exchange-traded products."

Low latency has proved a critical building block for Singapore's e-FX growth

## CATERING TO REGIONAL BUY SIDE DEMANDS

Improvements in technology tend to spur new demands from market participants, particularly from the buy side. Proximity to an ecosystem is a top priority, Bridges says, something Equinix solves. "Equinix is home to the world's largest multi-asset class e-trading ecosystem," he says, "creating the means for major banks, FIs, and retail FX brokers in Asia-Pacific to interconnect on a fast, secure, and reliable platform."

"The depth of liquidity partners and working with the right technology partners is essential to long-term success for buy-side firms," he continues. When asked what attributes buy side firms must look for, Bridges says, at a minimum "...technology partners must offer reliable, capable, and scalable solutions that can evolve in line with customer needs, enabling them to effectively meet rapidly changing demands of modern trading environments."

Meanwhile Rymill notes that enhancing client experience is a top aim at State Street and clients tend to drive innovation and demand as a result. "I find some APAC clients are still adapting or establishing exactly what best execution means for them," he says. "It could be driven by the consolidation in the asset management industry in Australia, or APAC-based alternative asset managers beginning to think about ideas that are more traditionally associated with the real money community."

"Approaching these conversations with clients through the lens of a custodian," he continues, "where



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Singapore's infrastructure investments have paid off handsomely

there is a high degree of concern for the end asset owner combined with the resource within the group of a topflight TCA provider in the form of BestX, for example, is a huge advantage."

He lists examples within State Street's product suite as evidence of innovation and the kinds of demands service providers face. "With "Interest match" we delivered a first step toward peer-to-peer matching. It allows clients to leverage State Street's unique franchise by matching client orders with our principal interests and other algo orders, lowering market impact and reducing signalling on external venues," he says.

"The Portfolio Algo allows a user to group together multiple transactions, with the aim of reducing overall execution costs compared to executing each currency individually and our "Staged Algo" allows a parent algo order to be composed of multiple child algos."

Lee uses TCA as an example illustrating SGX FX's client focus. "TCA has become more than a box-ticking exercise for regulatory purposes," he says. "It's now a tool used to create a feedback loop that enables traders to make informed pre-trade and in-trade decisions to reduce costs."

"SGX FX supports clients with its Liquidity Provision Analytics and advanced TCA solutions which offer a robust analytical framework. We can cleanse, store and deliver client tick data via an API or into a GUI to allow clients to monitor their Liquidity Providers spreads and check for skews and top of book statistics. Our analytics offer numerous features such as best execution activity LP rankings and hit ratios, market share analysis, spread analysis and detailed analysis on best time to trade."

He adds that SGX FX's advance reporting tool allows clients to report on trade decay analysis across all their trades and ".....compare own benchmarks, our own composite benchmark, or standard benchmarks such as WMR/Eod, etc."

## SOLVING APAC TREASURY NEEDS WITH TECHNOLOGY

Singapore has been Asia's largest FX trading hub since 2013, and the reasons are easy to see. Geographically, the city-state offers proximity to growing Asian markets, offering stakeholders the ability to sell, price, and trade in a single venue conveniently located.

Superior infrastructure and forward-thinking regulation have also played a role, leading to MNCs setting up regional headquarters in Singapore and establishing a base for risk and treasury management. While the market possesses significant depth and liquidity, corporate treasury management hasn't come without challenges over the past year.

Angus Murray, EMS Specialist for APAC at 360T, is well aware of the


## SGX FX SEES HIGHER VOLUMES AMID STRONG GROWTH

As Singapore's premier multi-asset exchange, SGX has had a front-row seat to Singapore's growth story. SGX is now Asia's leading marketplace for global FX OTC and futures participants. Lee Beng Hong, Head of Fixed Income, Currencies and Commodities at SGX Group, cites impressive numbers when asked about trading volume trends.

"We are on track to achieving our target OTC FX average daily volume (ADV) of US$100 billion and are now established as a global leader in the FX NDF market with 40% market share," he says. "SGX FX also operates the largest and most liquid FX futures exchange in Asia. In 2022, we recorded an aggregate FX futures volume of US$2.07 trillion (up 37% YoY), with record open interest of US$18.6 billion (up 55% YoY)."

And how have 2023 volumes been panning out? "For the first six months of 2023, our aggregate FX futures notional volumes reached US$1.2 trillion with robust trading across major currency pairs including CNH, INR, SGD, KRW and TWD" he says. "Over 40% of our FX futures are traded during European and US time zones and this has trended upwards."

Lee explains that SGX's clients have been seeking solutions across three pillars: Enhanced digitalisation and automation, optimised execution, and better margin efficiencies. "Since our expansion into the OTC market with the acquisition of BidFX and MaxxTrader, SGX FX has become Asia's leading and most comprehensive venue for the risk-management and trading of major currencies across FX instruments," he says.

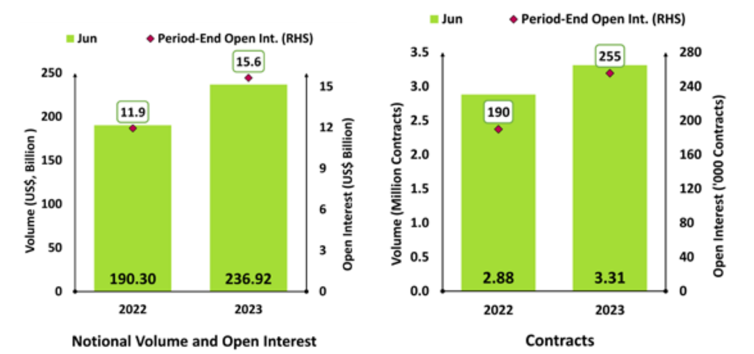
"In September 2022, we launched SGX CurrencyNode, an FX electronic communication network (ECN) that connects global participants anonymously to unique and deep OTC FX liquidity pools. We have since rolled out NDFs and signed on 7 of the 10 global Prime Brokers while continuously growing our base of market participants."

As a result, SGX's clients have access to Asia-centric OTC and exchange-traded FX products in a single destination. "We were also the first exchange to launch FlexC FX Futures (FlexC) that are standardised yet customisable, offering OTC bilateral trades with tailored expiration dates to be registered and cleared on SGX FX," Lee says.

When asked what market participants are trading in the region, he notes that OTC FX volumes are in line with global patterns. "About 60% of SGX FX's OTC FX trading activity, across both buyside and sell-side customers, are in G10 currencies," he says. "Asian currencies take up about 30% and continue to grow. While SGX CurrencyNode sees over 70 currency pairs actively traded in our marketplace, about a quarter of the volumes traded daily are in CNH, given the regional bias in our liquidity."

He adds that SGX has become the leading NDF trading venue for investors looking to trade emerging markets.

Lee concludes by noting MAS' role in building an ecosystem that favours FX market stakeholders. "On top of this, Singapore is home to the world's most liquid Asian FX futures exchange, that is SGX FX," he says. "Having both the ECN and FX futures side-by-side no doubt makes Singapore more appealing and vibrant."




SGX FX Futures notional volume in June 2023 is up almost 25% y-o-y to US$236.9 billion


climate treasurers currently face. "The unique regulatory environment in APAC poses unique challenges. For example, restrictions around onshore currencies and how they can be traded are obstacles that must be navigated.," he says.

So what role can technology play in mitigating these risks and easing workflows in corporate treasury?

### ESTIMATING TREASURY CHALLENGES AND MAPPING NEEDS

Murray identifies a few Asia-specific characteristics that need to be addressed by the modern treasurer. "Fragmented treasury structures are common in Asia," he says, "with multiple entities and people dispersed throughout the region, making workflows complicated and often manual." As a result, controls and oversight is challenging, and firms have been moving towards centralising functions.

Standardisation is one way of mitigating this topic and puts firms in a better position to deal with more familiar situations. "Increasing volatility in Asian currencies and interest rates have impacted margins and cost of capital," Murray says. Technology service providers have been rising to the demands, he notes.

Solutions enabling price transparency while streamlining workflows are commonplace in the market. Centralisation is a broad theme, Murray notes. "Streamlining workflows maximises both, time and cost efficiencies whilst simultaneously reducing operational risk," he says. "Freeing up treasury personnel's time to focus on more complex tasks by helping corporates automate low-value FX trades and manual processes, is also a major focus area."

More electronification implies better access to data, and unsurprisingly, offering solutions around pricing outcomes, TCA, bank panel performance, and liquidity optimisation is in high demand. While treasurers can access solutions that meet these needs to varying degrees, Murray points out that being aware of what technology and automation can achieve is critical.

"We've seen the growth of highly flexible and user-friendly netting strategies to minimise transaction costs, optimise internal flows, and reduce operational and settlement risk," he says,. Murray also points out that the rules-based auto-execution solutions for low-value trades and products are commonly used.

"Treasurers can even combine the use of automatic netting and execution rules to implement a low, or in some cases, no-touch workflow," he says. Finally, he points out that the increasing use of algos in FX (primarily TWAP) to achieve better pricing outcomes points to the scope of services tech can offer treasurers. "At 360T, corporates are our largest consumers of algos in APAC," he notes.

### MANAGING DATA AND SCREENING SERVICE PROVIDERS

The increased use of technology doesn't come without some complexity. For instance, electronic systems are only as good as the data they're given. This makes data management key. Murray says that best-in-class firms are using data to benchmark pricing pre, in-flight and post trade, and rethinking visibility between internal entities.

"Firms are implementing staged workflows to segregate duties and control visibility," he says. "Using compliance tools to monitor, identify, and prevent breaches is also critical, and is rapidly gaining in popularity."

"Data management also makes quantifying bank panel performance and TCA simpler, and facilitates transparency, liquidity optimisation and the instant identification of netting efficiencies too," Murray adds. "Treasurers can align themselves with the idea of data driving better pricing outcomes."

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**"Fragmented treasury structures are common in Asia with multiple entities and people dispersed throughout the region, making workflows complicated and often manual."**


Angus Murray

Establishing high-quality data governance workflows is essential, but treasurers need to rely on the technical teams to ensure top-notch infrastructure alignment too. For instance, "A treasury management solution (TMS) should supportinterfaces for STP eliminating human intervention for pre and post-trade order entry reducing double keying and operational risk whilst increasing efficiency and ensuring one source of truth," Murray explains. He also points out that confirmation matching is powerful in streamlining settlement processes.

Given the technical nature of this list, how should firms go about evaluating service providers?

"Focus on your pain points, where your time is spent, and where your risks are," Murray says. "If you view solutions through this lens you will ensure the tools you buy are fit for purpose. Forget the bells and whistles, focus on the nuts and bolts of what you need your technology to do for you."

He adds that effective service providers work on a consultative basis, with a reliable track record of identifying risks, gaps, and efficiencies. "An extensive product range is also a good sign" he says. " For instance, 360T expanded its suite of award-winning market data products, further refined the advanced automation tools available in the 360T Execution Management System (EMS), and launched Base Metals trading and streaming NDFs."

"Treasurers should ensure the provider continuously innovates. At 360T we are committed to implementing three new technology releases per year, enabling our solutions to evolve alongside the needs of our clients."

Mere electronification isn't enough as technology grows more sophisticated. "Embrace automation," Murray advises. "It's not about replacing people, it's about replacing processes. Then your Treasurers can focus on more valuable tasks."

He also says that using data to drive trading decisions and pricing discussions with bank counterparties is critical. "Ultimately, focus on your core business and automate the noise as much as you can," he says.

## REGULATORY ACTION IS BUILDING A PROMISING FUTURE

"Today, Singapore's status as an FX hub is facilitated by the presence of leading FX firms that have launched trading engines with Equinix's SG1 data centre," Equinix's Bridges says. "Our FX hubs, strategically located in the world's largest FX markets such as Singapore, enable FX firms, including Euronext FX, Jump Trading, Lucera, Orient Futures, and Spark Systems, to execute trades more efficiently by minimising latency between counterparts." Bridges singles out MAS' progressive initiatives as the primary reason behind these developments and overall FX growth.

At the same time State Street's Rymill offers an example of how regulation has boosted Singapore's reputation as a stable and secure FX hub. "The CFTC approval of Recognized Market Operators (RMOs) authorised within Singapore (Bloomberg, Refinitiv, and SGX FX venues) as exempt from CFTC swap execution facility (SEF) registration requirements speaks volumes to the confidence in Singapore," he says. "The easing of access to liquidity for clients who are based in APAC and papered with US legal entities is significant. We keenly await additional NDF matching engines in Singapore and the improvement in price discovery this should allow for."

SGX Group's Lee says, "FX trading technology is going through a renaissance period in Singapore. Thanks to the parameters, direction and guidance from MAS to help technology to flourish, there has been high-calibre talent inflow from the region, making Singapore all the more relevant as a banking and fintech hub."

"MAS has successfully built the ecosystem," he continues, "for both makers and takers to come and participate in building the SG1 matching hub. To kickstart, MAS helped major FX market makers to set up their pricing and hedging engine. Subsequently, they focused on assisting ECNs/marketplaces – this is how SGX CurrencyNode, a marketplace for both buyside and sell-side, was born out of SG1."



### THE FINTECH VIEW: REGULATORY ACTION AND INFRASTRUCTURE KEY GROWTH LEVERS

Singapore's exemplary infrastructure has attracted traders and firms from around the world. Regulatory foresight and proximity to growing Asian markets have ensured a highly developed fintech scene catering to these traders. Whether retail or institutional, Singapore is witnessing growing trade volumes and technology to support this demand.

While these factors have been around for some years now, Jason Wang, COO of Spark Systems, points to a more recent development as a spur for further growth. "Singapore is Asia's major banking and financial centre, with a stable government and skilled workforce," he says. "It has also now successfully built the SG1 data centre for FX buy side and sellside to trade and match their trades."

Meanwhile Chan Chong San, Managing Director APAC at Edgewater Markets, also identifies the data centre as playing a critical role in Singapore's recent FX journey. "It enables efficient and secure trading operations, ensuring low-latency connectivity and reliable access to global markets," he says. "This infrastructure is crucial for FX trading firms to execute trades swiftly and capitalise on market opportunities."

Chang Chong San

"Institutions are increasingly recognizing the convenience and accessibility offered by mobile trading and are actively engaging in various activities through mobile platforms."

Technology is playing a critical role in Singapore's growth. Here are the important trends and how fintech service providers view the marketplace.

### TECHNOLOGICAL ADOPTION ACCELERATES FURTHER

When asked about interesting regional trends, Wang takes a step back and notes how prevalent tech is in everyday lives in the city-state. " In Singapore, literally you do not need to carry cash when you go out, and do payments from your phone," he says. "There's also the growth of super-apps, where we see successful apps go into other aspects of businesses."

This mass technology adoption has found its way into FX. "At Spark, we have clients who choose us because of our mobile app, and we see banks that are adapting to allowing their traders to use mobile apps," Wang says.

Edgewater's Chan adds that institutional choices are changing as firms begin trusting service providers and technological solutions more. Notably, firms are more willing to leverage third-party experts for technological tasks that are not a core business function.

Chan offers an example. "One thing we've seen is the advancement of adaptive white-label technology. This allows financial institutions to leverage pre-built platforms and customise them according to their specific requirements, enabling faster deployment of digital banking solutions. They can maintain brand identity through modularity, flexibility, and client service."

"As in other parts of the world, our recent expansion into Singapore supports this by offering a forex platform as a white-label solution to financial institutions in the region," he adds.

In line with white labelling, Chan explains that a buy-and-build approach has gained momentum. "This strategy involves acquiring existing technology or partnering with established players to enhance the capabilities of fintech trading platforms, in addition to cultivating in-house technical talent to build and maintain differentiated systems," he says.

The word "ecosystem" is used a lot when speaking of Singapore's advantages as an FX hub. Wang explains that much of this ecosystem growth has emerged from the sell side setting up infrastructure in Singapore, which has led to knock-on effects.

"MAS has incentivised banks to set up their FX trading engines here. This was a multi-year program and now, there are over 20 banks with their FX IT infrastructure in Singapore," he says. "This has attracted buy-side firms to Singapore and they have set up their IT infrastructure here too."

In addition to the buy side moving, the sell side has shifted other departments to Singapore too. "We have seen sell side banks set up other upstream and downstream systems like Risk and Back office here," Wang notes. "Many also have their FX traders and sales, quants, and IT support staff move to Singapore."

### TRADER BEHAVIOUR AND REGULATORY STANCE

Stable regulation has played a key role in Singapore's rise as an FX regional hub. MAS has initiated several AML, licensing, and risk management programs that have built trader confidence, leading to increased volumes.

Chan cites a recent initiative as an example of regulation fostering confidence in the market. "MAS rolled out an Enhanced Market Surveillance system, which enables them to monitor trading activities and detect misconduct," he says. "The trading community has generally responded positively to these regulations, understanding that these are to protect their interests. These regulations have resulted in a collaborative approach between regulators and market participants, with both sides working together to enhance the overall stability and growth."

Wang notes that enhanced regulations offer opportunities for service providers. "Regulations usually mean more work to be done to meet requirements," he says. "From our perspective, it creates opportunities. Recently, there has been a need for trading platforms to create a Unique Trade Identifier (UTI). At Spark, we are more than ready to meet these needs. Our agility to respond to the requirements helps to differentiate ourselves from the competition."

The combination of regulatory confidence and technological adoption has created a few interesting behavioural trends amongst traders. Chan cites the growth of institutional mobile trading as an example and explains how Edgewater is catering to this demand.

"While retail traders have traditionally dominated the mobile trading space," he says, "we've observed a notable increase in institutional participation. Institutions are increasingly recognizing the convenience and accessibility offered by mobile trading and are actively engaging in various activities through mobile platforms."

But do mobile platforms offer the flexibility and customization inherent to desktop versions? "To cater to individual or firm-specific rules and requirements, Edgewater's mobile trading platform offers comprehensive permissioning capabilities," Chan explains. "This ensures institutions can tailor the platform to align with their unique trading strategies, risk management protocols, and compliance guidelines."

"Edgewater has introduced a branded white-label tool that enables clients to extend the benefits of mobile trading to their own clients," he adds. "This white-label solution allows institutions to offer a fully customised and branded mobile trading experience to their end-users, maintaining consistency with their overall brand identity."

### LOOKING AHEAD

Singapore has risen significantly in the FX world but faces stiff competition from the likes of Hong Kong and Tokyo in the region. Chan thinks a steady commitment to infrastructure development is critical to maintaining and growing Singapore's position in the market. "By continuing to invest in infrastructure, Singapore can stay ahead in the race and provide a solid foundation for companies like Edgewater to deliver their forex platform seamlessly," he says. "Incentivising key players to participate is also essential for Singapore's success. The government and regulatory bodies can introduce initiatives and incentives to attract prominent forex companies and encourage their active involvement in the market. By fostering a vibrant ecosystem with a diverse range of participants, Singapore can ensure healthy competition and innovation within the forex industry."

He also notes that talent development and migration are key growth levers for the city-state, allowing it to build a pool of proven expertise. Wang is similarly optimistic about Singapore's growth. "We didn't get here overnight," he says. "There's a lot of hard work involved by all parties, which include the MAS, the sell side banks, the FX buy side, the ECNs as well as the vendors. All parties must work to stay relevant in the ever-changing landscape to maintain Singapore's status as a successful FX centre."

Jason Wang

"We didn't get here overnight, All parties must work to stay relevant in the ever-changing landscape to maintain Singapore's status as a successful FX centre."

## THE REGULATOR'S VIEW

Every financial centre's growth hinges on good policies to promote industry development, and Singapore is no different. Its proximity to Asian clients with rising FX needs and the presence of a critical mass of banks, asset managers, insurers, and treasury centres offer a deep pool of liquidity.

As electronification grows in FX, delivering services with low latency (powered by Singapore's high-quality infrastructure) has become a reality, leading to the city-state's exponential rise in FX circles. A MAS spokesperson highlighted the nature of this rise.

"According to the 2022 BIS Triennial Survey, Singapore's average daily trading volume (ADTV) rose to US$929 billion, increasing by 45% from April 2019. With Singapore's share of global FX volumes rising to 9.5% in April 2022, Singapore maintained its ranking as Asia's largest FX trading centre, and the third largest globally."

A lot of this increase reflects the increasing sophistication in Asian EM currencies. Asian EM currency volumes account for 10% of global averages, with NDFs showing healthy growth too. "To meet this demand, various platforms in SG1 have launched NDF offerings, with the latest being SGX Currencynode," the MAS spokesperson says. "This will continue to drive liquidity in the FX market and allow Singapore to continue to capture flows. Later this year, LSEG Refinitiv is set to launch NDF matching in SG1, giving an additional boost to NDF liquidity."

MAS has been focusing on convincing primary inter-dealer platforms, MDPs, and liquidity venues to locate their matching, pricing, and trading engines in Singapore.

"The result of the FXET Ecosystem (FX e-trading ecosystem launched in 2018) initiative has seen 18 of the top 20 global liquidity providers set up pricing and matching engines in Singapore," the MAS spokesperson says. "In turn, this has attracted liquidity takers, multi-dealer platforms and inter-dealer platforms to also set up here."

While working to boost the region's growth, MAS has reiterated its Statement of Commitment to the updated FX Global Code, encouraging all wholesale FX market participants in Singapore and their counterparties to adhere to the latest version.

One of the most exciting developments has been MAS' initiative to encourage blockchain and other DLT solution use. When quizzed about the authority's regulatory approach, the spokesperson says, "MAS has been collaborating with the industry to explore the potential of blockchain through experiments, providing grants and encouraging talent development. MAS has also adopted a regulatory approach that is technology neutral, risk-appropriate, and targeted."

While they noted that the case for a retail CBDC in Singapore isn't currently compelling, MAS has launched a series of initiatives to prepare the ecosystem for when a CBDC launch might be attractive. Project Orchid, the primary initiative, released its first report in October 2022 exploring Purpose Bound Money (PBM) use cases, building on the concept and capabilities of programmable payment and programmable money.

"November 2022 also saw the launch of Ubin+ in collaboration with other international financial regulators," the spokesperson says. "The aim is to bolster digital currency connectivity and establish corresponding technical standards, infrastructure, and policy guidelines that will strengthen cross-border FX settlement using digital currencies."

MAS has been advancing collaboration with the Federal Reserve Bank of New York's New York Innovation Center (Cedar x Ubin+) to investigate how wholesale CBDCs could improve the efficiency of cross-border wholesale payments involving multiple currencies.

In addition, MAS is also a part of Project Mariana, a collaborative effort between the authority, Swiss National Bank, Banque de France, and Bank for International Settlements (BIS) to explore the interoperability of regional networks into a global network for cross-currency exchange.

"MAS sees transformative potential and benefits of asset tokenisation, similar to securitisation 50 years ago," the MAS spokesperson says. "To explore the potential of digital assets and advance the development of efficient and safe financial networks, MAS launched Project Guardian in June 2022. Through this initiative, MAS aims to collaborate with the financial industry to harness the capabilities of tokenised assets and decentralised financial protocols while managing the risk to financial stability and integrity."

These are just a few of several initiatives MAS has initiated, leading to an undoubtedly resilient infrastructure for the future. These initiatives also offer examples of the qualities FX market stakeholders find highly attractive and explain Singapore's rise in eFX.




# Spotlight on Finalto's Singapore expansion

**Finalto recently won the 'Best B2B Liquidity Provider APAC 2023' award at the UF AWARDS APAC Ceremony which took place on June 22nd, the final day of iFX EXPO Asia 2023 in Bangkok. As our regional e-FX perspective feature in this edition of e-Forex is focused on Singapore we asked Alex MacKinnon, the Regional CEO of Finalto Asia, to discuss the company's expansion into Singapore with a new data centre and the benefits it brings to clients and stakeholders.**

Alex MacKinnon

**Alex, can you give us a snapshot of what led Finalto to make the strategic decision to launch a new data centre in Singapore?**

The impetus behind our decision to establish a data centre in Singapore stems from our dedication to providing steadfast support to our global clientele.

By having the data centre in Singapore, we're empowering our customers with access to the three largest FX data centres by volume.

This move is all about being where our clients need us most, enhancing the connectivity in the region and building a truly global network for our services.

**What advantages can clients and stakeholders anticipate from this expansion?**

Our clients in Asia will experience a considerable decrease in latency due to the geographical proximity of the new data centre. By bridging the distance between Asia and financial hubs like New York and London through our Singapore centre, we're ensuring a significantly faster and more efficient service for our clients and, in turn, for their own customers. This reduction in latency is especially critical in the financial industry where milliseconds can make a difference.


Best B2B Liquidity Provider APAC 2023' award

**Could you shed some light on how the new data centre is going to enhance Finalto's capacity and facilities for serving its clientele?**

The new data centre will avail global liquidity sources to our clients, granting them the ability to make more informed decisions utilising the geographical centre that best satisfies their latency and liquidity requirements. Essentially, it will offer a greater range of choices and more flexibility to our clients, enhancing their ability to navigate global markets no matter where they are.






Our clients in Asia will experience a considerable decrease in latency due to the geographical proximity of the new data centre

**Establishing a data centre is no small feat. Were there any hurdles in setting up this facility, and how did Finalto tackle them?**

Surprisingly, the process was quite smooth for us. Leveraging the experience gained from setting up our New York data centre last year, we were able to efficiently establish the Singapore setup within a span of just five months. Of course, it was the team's expertise and commitment that played a pivotal role in streamlining and easing the process

**With data security and privacy being paramount, how does this expansion reflect Finalto's commitment in these areas?**

Our foray into Singapore is in lockstep with our staunch commitment to data security and privacy. The standards we are implementing in Singapore mirror those we continue to implement in our London and New York centres. Additionally, we remain vigilant and adaptive, constantly refining our security protocols to meet the evolving challenges in the data landscape. Clients can rest assured that when they trade with Finalto systems their data is safe and secure regardless of which data centre they are being priced out of.

**Lastly, can you provide some insights into the timeline of this expansion? When can clients expect the new data centre to be fully operational?**

We ordered the hardware at the start of 2022, and it was delivered by June. Our IT operations team conducted two setups in Singapore in September and November 2022. Come January 2023, we prioritized the implementation project for the Singapore data centre and allocated a cross-functional team from ClearVision R&D. The solution was finalized either at the end of April or in early May. Currently, we are in the phase of Friendly Client testing. If the testing phase proceeds successfully, we can anticipate that the data centre will be fully operational shortly thereafter.

**Before we wrap up, is there anything else you would like to share with our readers?**

I'd just like to emphasize how thrilled we are at Finalto to bring this data centre to Singapore. We recognize the importance of being close to our clients and the markets in which they operate. The strategic placement of this data centre signifies our commitment to innovation, excellence, and most importantly, our clients. We believe that through this expansion, we are making a positive contribution to the financial ecosystem in Asia.

# Great teamwork in action:

## e-Forex speaks with Michael Idzkowski, Director of Sales at DMALINK® and DeFinity Markets


**DMALINK is an independent electronic price discovery and execution venue for professional FX traders. It is part of a fast growing group that now includes DeFinity Markets which is a decentralised digital asset exchange, specialised to trade traditional and digital assets via smart contracts, with a focus on providing real-time settlement and clearing. Three years ago Michael Idzkowski joined the group as Director of Sales. His analytical background, track record in sales and ability to serve client types ranging from individual investors to Tier 1 institutions has strengthened the core competencies, relationships and transparency of both businesses. We spoke to him and some of his senior management colleagues at both DMALINK and DeFinity Markets to discover more about the exciting developments taking place with the business and how their combined teamwork is really starting to pay off.**

Michael Idzkowski

Great teamwork in action - DMALINK® and DeFinity Markets

**Michael, what attracted you about DMALINK and encouraged you to join the firm?**

**MI:** The idea that got to me was the fact that two men were taking on the world of e-FX with everything on the line. FX is such a competitive market that no one dares to do things differently; broadly speaking, innovation has been quite stale. DMALINK was the first to bring the ‘no fee for LPs’ model to align our interests with clients, benchmarked execution is a feature that’s becoming requested more frequently by the funds, and so there are different angles we can take to help our clients—lastly, the lack of office politics. The absence of fear of being judged or ridiculed really changes the way you think and allows an individual to grow far more than in an environment where the status quo prevails. We can also see this working for our most recent hires through how they acted when they started vs. now. Everyone has (or should have!) ideas, but 80% never see the light of day given the insecurities an unhealthy work environment creates.

**A few years have now passed since you joined the firm. Please give us some insight into how you feel things have progressed?**

**MI:** Certainly. The market is different from five years ago. Many bank LPs we work with utilize the latest technologies to weed out bad behavior in the industry; we take that idea to the next level by further rewarding participants that continue to respect liquidity by providing skewed feeds, at base level or one-hand-sided. Our client footprint has grown thanks to our presence at leading trade shows. The sale cycle isn’t as much of a sale as it is fact-finding combined with helping people understand the inherent pros of trading on an ECN, specifically, one that differs by such a margin. The hardest part has always been scheduling the first conversation; persistence is key, and removing your ego to enable yourself to engage with new participants consistently is critical to successfully growing any business.

**Have you met all your expectations for the business so far?**

**MI:** In short, yes, but the long answer is the more interesting. The team articulated expectations, so there were no surprises or hidden daggers within the contract. This is a major part of why working within a team of like-minded people focused on the goal instead of their personal gain makes working much easier. We’ll all achieve our ‘personal’ goals if we can champion the challenges we set out to tackle in the FX and Digital asset space. Speaking for everyone on the team, we’ll never hire someone who doesn’t have a constant drive to do more. We’re still a small firm but are embarking on a huge mission within digital assets; we need people who can match our speed of execution, from high-level decisions to the basics of answering an email or phone call asap, to show our clients we’re there for them.


Clients are in good company trading on DMALINK

**Let’s address two questions now to your colleague Michael Siwek, Co-Founder of both DMALINK® and DeFinity Markets. Please tell us more about your team and what the dynamics are between their key roles?**

**MS:** The background of the core team is OTC derivatives structuring and sales (FX, Commodities, IR & Inflation), within UK investment banks and electronic trading within exchanges, namely NatWest Group (RBS), Lloyds Financial markets Barclays Investment Bank, NYSE and Deutsche Borse. We all have a strong affinity towards digital assets and have done since 2017, however, we all come from a TradFi background. Saying ‘having a good team is paramount’ is a near truism today, but the importance of this cannot be stressed enough. Our hiring goal is to find people that excel at different aspects of our business so that we can service clients in harmony. Manu Choudhary joined us four years ago from Lloyds with over 18 years of experience managing teams focusing on the bank’s FX products. His global macro knowledge and understanding of FX options, rates, and spot helps us tailor the business to our client’s needs. The biggest strength is his ability to adapt to the new age and champion the concepts which are only emerging; He is one of the co-founders of DeFinity Markets which is the brainchild of years of combined lessons learned in the world of FX, coupled with a holistic understanding of the issues faced when trading digital assets, namely counterparty risk and credit intermediation.

**Recently, the firm has grown its strategic advisory team. Please tell us about the selection process and advisory team’s remit, specifically Greg Myers, who joined about a year ago as senior regional adviser for EMEA.**

**MS:** We were seeking to attract people who can use their experience as a business builder and accumulated knowledge base, specifically of the financial markets, to speed decision-making time, to market with proven solutions, and without the pain of trial and error. We were keen to attract talent to assist with the formulation and execution of the company’s overall strategic plan, including identifying market opportunities, assessing industry trends, and developing long-term growth strategies. To benefit existing and incoming shareholders, we look for agenda-free advice that is based on facts and real experiences. The management team appreciates that this intellectual honesty and experience can drive innovation and growth.

Michael Siwek

**So now a question for Greg. Why did you decide to join DMALINK as a strategic advisor?**

**GM:** Having met and been impressed with the team’s ambitions and their foresight to understand the significance of strategy and that business objectives and challenges can be enhanced by expertise outside of their organization. With an existing strong FX trading venue and the ambition to move into the digital assets arena for institutions, it was important to look at the growth element and how to enhance the existing offering, extend it into new global FX opportunities, and lay the groundwork for the launch of our digital asset trading solution for financial oriented institutions. As a strategic advisor to a digital assets trading business for institutions, my remit would typically involve providing expert guidance and insights to the company’s leadership team in order to optimize their operations, enhance profitability, and achieve their business objectives. Regarding institutional client services, I advise the group on

In terms of market analysis, we appreciate the value of in-depth research and analysis of the digital assets market, including cryptocurrencies, tokenized assets, and blockchain technologies. This involves evaluating market dynamics, competition, regulatory factors, and emerging trends that may impact the company’s business. As to business development, it is critical to attract advice around identifying and evaluating potential partnerships, collaborations, and acquisition opportunities that can help expand the company’s client base, increase trading volumes, and diversify revenue streams.”

Manu Choudhary

Great teamwork in action - DMALINK® and DeFinity Markets

Greg Myers

the development and enhancement of services specifically tailored for institutional clients, including trading solutions, custody services, liquidity management, and regulatory compliance frameworks. Assisting the team in terms of developing new revenue lines with robust planning and effective controls is key in my role. Performance Analysis has always been paramount to me in monitoring and evaluating the company's performance metrics, key performance indicators (KPIs), and financial results. Identifying areas for improvement and working closely with the team to implement strategic initiatives. Overall, my role as a strategic advisor would be to provide valuable expertise and strategic direction to help the digital assets trading business optimise its' operations, navigate industry challenges, and capitalize on opportunities for growth in the institutional space.

**Michael Idzkowski if we could bring you in here again. What factors influenced the firms decision to move into the digital asset space?**

Ashwind Soonarane is COO of DMALINK

**MI:** Digital assets, and to take a broader view, digitization and tokenization of the financial markets have already begun. We saw this from bond issuances from several large institutions, all the way up to exchanges already trading some form of digital assets. For us, it's always a question of 'What is the problem?'. We established four key considerations for institutional market participants: AML/KYC/KYT, counterparty risk, credit, and capital efficiencies. The other consideration we noticed was two distinctive client camps, the crypto natives and investment grade financial institutions, which are interested in participating but cannot due to the earlier highlighted reasons. This thought process instigated a chain of events that led us to where we are today.

**Which client types does DeFinity cater to?**

**MI:** There will be two cohorts of clients which will merge into one. First, we have the fully regulated, investment-grade financial institutions such as pension funds and asset managers who already have credit lines in place with various Prime Brokers who will utilize DeFinity as the springboard to enter the space. Through us, these institutions will face a global tier 1 credit intermediary.

This means, issues around counterparty risk, AML, and credit largely disappear. Here we're talking about the large names who have been given remits but are still quite docile, given they cannot face sub-investment grade counterparties. The second client pool comprises pre-funded participants who we'd categorise as crypto natives. These counterparties will be prioritized for engaging with the investment-grade users when the two systems begin to merge."





**Coming back with a few more questions for Michael Siwek about Digital Assets. What were the challenges faced in creating digital asset solutions fit for investment-grade firms?**

**MS:** In reality, there are too many to count! But the costs of establishing a new trading platform within the space were noticeable. Being largely self-funded means we must seriously consider our steps. From a time perspective, the other main consideration was drafting and agreeing of legal contracts between users, the DeFinity platform, and intermediaries. In terms of technical integration, FIX API connectors are plug-and-play yet require time for conformance. The number one challenge was creating a smooth fiat on/off ramp system, credit intermediation, and bringing a new concept to the market where exchanges are most present today yet bear many inefficiencies.

**How do banks fit into your electronic digital assets trading ecosystem?**

**MS:** Many counterparties have raised $50m+ to facilitate digital asset trading and failed. But the reason that most of these firms fail is because they see banks as competition; we do not. We see banks as being an integral part of our ecosystem. We believe that in order for digital asset trading to be embraced on a meaningful scale, banks can help to turn a trustless system into a trusted system. A number of digital asset offerings do not address any of the shortcomings of the current infrastructure. Our thought process has always been, how can we give access to spot crypto to fund managers that are unable to face counterparties that do not have a credit rating, which is why we created our novel credit intermediation solution, in which banks will play an ever-increasing role.

Chris Park is one of the co-founders of DeFinity Markets

consumers. We have completely separated trade execution from custody of both fiat and crypto.

**What are the characteristics that set DeFinity apart from traditional crypto exchanges?**

**MS:** We do not make any cross-border payments; we are a venue where buyers and sellers meet anonymously to trade assets. What makes us unique and very different from an exchange is that we are not principal to the trades; we have direct market makers and direct liquidity

**It seems that today's digital assets credit models carry increased opportunity costs. Are there any solutions?**

**MS:** Digital assets are highly volatile, creating opportunities and risks. Institutions face the challenge of timing their trades to capture market movements. Pre-funding means missing out on potential gains or losses during the waiting period,


Our client footprint has grown thanks to our presence at leading trade shows

**Great teamwork in action - DMALINK® and DeFinity Markets**

Our hiring goal is to find people that excel at different aspects of our business so that we can service clients in harmony

resulting in opportunity costs for institutional traders. Our solution enables users to net longs/shorts intraday dynamically, therefore increasing traders chances to capitalise on intraday price movements."

**We can't complete this article without a few final words from Manu Choudhary. Michael has given us his reason but why did you decide to join the firm?**

**MC:** The key idea for me was the opportunity to change the landscape of digital assets. I saw time and time again how inefficient that market is and the comparisons to the world of FX in the late 90s and early 2000s; with that in mind, we got to work on creating a solution. This led us down a 24-month rabbit hole of legal agreements to finally get us to where we are today with DeFinity Markets. This has profound implications for the market; counterparty risk decreases drastically, and credit intermediation is made simple via existing credit arrangements users can rely on. Our system introduces a new cohort of participants who previously could not participate in the market given the absence of an investment grade solution.

**Where will the focus of the business be over the next two years or so?**

**MC:** The focus remains on the FX ECN including the inventory management for FIs through passive interest matching of orders in our dark pool setup; however, we've had a huge amount of inquiries about digital assets, so with the launch of DeFinity Markets, we'll allocate some of our resources to that cause. We want to leverage our FX business network to fast-track the expansion of our digital asset ECN. The feedback we had from pension funds and traditional buy-side was that they want to participate and have been given mandates, but they need help facing the counterparties currently involved in the space. We have completely separated trade execution from custody of fiat and digital assets. For fiat custody, we have partnered with one of the largest European investment banks, which will hold cash or cash equivalents in ringfenced accounts; this will then permit the clients to trade digital assets on our platform without the need to pre-fund each trade. We are agnostic regarding the custody of digital assets; clients can either self-custody using Fireblocks or use an accredited custodian. In the scenario of a default or trade failure, we have full legal recourse to ensure that the other side of the trade is always made whole, and by doing this, we ensure that we minimise counterparty and credit risk as much as possible.

**In a nutshell how would you describe the group's ultimate electronic trading mission?**

**MC:** As we combine trading activities across cash foreign exchange, precious metals, and digital assets, users across these assets will benefit from seamless netting across the DMALINK and DeFinity platforms transacting with each other using one overarching legal agreement underpinned by FIX API connectivity. Netting positions across counterparties will help drive capital efficiencies and reduce the requirement for over-allocation of cash. Our multi-custody middleware TechStack sits in between the application and operating layer, enabling operability between multiple custodians.

Combining knowledge and IP across the group, our users benefit from an all-encompassing solution across traditional finance and digital assets.

**WE NEED PEOPLE WHO CAN MATCH OUR SPEED OF EXECUTION, FROM HIGH-LEVEL DECISIONS TO THE BASICS OF ANSWERING AN EMAIL OR PHONE CALL ASAP, TO SHOW OUR CLIENTS WE'RE THERE FOR THEM**

Image by Shutterstock

# Technology and automation

## Bringing a new dimension to Emerging Market FX trading



Nicholas Pratt

**Nicholas Pratt examines how a new generation of electronic platforms and technology is transforming emerging market FX trading and settlement processes.**

## Technology and automation – Bringing a new dimension to Emerging Market FX trading

**"More sophisticated workflows such as algo order execution are beginning to be utilised for EM currency pairs when traded with the global banks who offer these solutions."**

The latest triennial survey of global FX volumes published by the Bank of International Settlements (BIS) showed that the use of emerging market (EM) currencies has remained relatively constant over the past 21 years, less than 25% of all currency pairs. In fact the only noticeable trends are that the yen and the euro have seen volumes reduce at the expense of the renminbi with the dollar still involved in nearly 90% of global FX transactions. Nevertheless, as multinationals seek out new markets in search of growth and certain Asian economies continue to grow, EM FX trades are likely to increase in volume and value, which in turn will put pressure on platforms to ensure that trading is just as smooth a process in the less liquid and more volatile currencies as it would be in the G10 currencies.

According to Tod Van Name, Bloomberg's global head of foreign exchange electronic trading, trading in emerging market currencies can be characterised by thin liquidity, high volatility and greater potential for central bank intervention and currency control. "A lower appetite for credit risk by an institution can also reduce the number of counterparties available for trading relationships," says Van Name.

### BROADER UNIVERSE

Fortunately, electronic trading platforms have sought to address these challenges by helping to provide market participants with a broader universe of EM currencies and related services and to increase access to that universe, says Van Name. Bloomberg's FXGO is an electronic, multibank FX trading platform that has provided access to EM liquidity for a number of years, thanks to what Van Name describes as "our significant footprint among regional and local banks around the world" with market makers quoting on FXGO in over 120 countries.

Tod Van Name

Technology, and automation specifically, is helping to reduce the complexity and manual intervention that can be prevalent in the EM FX trading and settlement processes, says Van Name. "As new electronic trading solutions are developed and released, they are often initially utilised for the more liquid G20 currency pairs and are only later adopted for EM currencies. At the current time, Bloomberg's FXGO sees an active RFQ market in many EM currency pairs with auto pricing of requests by some market makers. In addition, more sophisticated workflows such as algo order execution are beginning to be utilised for EM currency pairs when traded with the global banks who offer these solutions."

"The pattern Bloomberg sees is one of EM currency pairs evolving through the spectrum of electronic trading workflows – from RFQ, to streaming executable pricing to algorithmic orders," says Van Name. "In EMs where settlement process can also be less sophisticated, Bloomberg FXGO has used its confirmation and matching service to bring efficiencies to the local settlement process. In addition, our STP solutions mean we can send trade messages through to the required systems which manage local currency settlement."

The use of API-enabled FX solutions have also helped to improve the lifecycle timing and reduce the operational burden associated with trading EM currencies, says Van Name. "API-enabled FX solutions can improve timing and reduce operational burden by utilising appropriate triggers to instigate trade requests. FXGO's Direct Order Routing (DOR) and Rule-Builder (RBLD) solutions can be used for such workflows, provided consideration is made for certain triggers in potentially volatile and illiquid markets."

Electronic platforms have also been able to reduce the operational risk that it is typically more prevalent in markets where liquidity is sparse and volatility is greater, says Van Name. "Electronic trading platforms enable the seamless flow of trade notifications and confirmations which means trades can be confirmed by both counterparties in a timely way. Completing this process and ensuring there are no trade errors, quickly reduces the potential for larger losses in volatile currencies with thin liquidity."

One consequence of the proliferation of electronic platforms is the growth in NDF trading. "NDF trading has been growing for a variety of reasons including improved market transparency, the reduction in trading costs, and improved management of operational risks that electronic trading have brought. Bloomberg's FXGO provides access to NDF liquidity from banks not only using an RFQ workflow, but also through our FX Trading Grid which is used for streaming executable pricing, as well as providing access to NDF algorithmic



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order execution. FXGO has seen an average annual growth rate of 43% in NDF volumes over the last five years."

So what can be expected in terms of the digital workflow innovation and automation in EM FX platforms? "The true electronification of trading in EM currencies is still evolving and in the short-term it will focus on an expansion within existing functionality established for G20 currencies," says Van Name.

**"..electronic platforms are the mediums to trade NDFs on EMCs, but the decision making process should focus on finding a broker who can support all of your currency needs, as well as NDFs."**


## MARKET ACCESS

According to Gerard Melia, heads of sales at StoneXPro, the biggest challenge of trading EM currencies, alongside volatility and the political and economic environment, is market access. "Not all brokers offer liquidity in these currencies, and those that do experience higher barriers to entry than for more established currencies. This is because EM currencies are more volatile and risky, and brokers need to be able to manage their risk effectively and have prime brokerage (PB) facilities to support these currencies," says Melia.
Another challenge of trading EM currencies is volatility. "These currencies are often more volatile than developed market currencies, which means that prices can swing significantly in a short period of time. This can make it difficult to trade EM currencies profitably, and it can also lead to higher risk exposure than brokers and traders desire. Not all brokers offer the same level of liquidity and risk management in EM currencies so make such that you choose a broker with a good reputation and the ability to meet your EM currency needs - having access to a trading desk expertise can help clients mitigate some of these risks," says Melia.

EM currencies are also more exposed to political and economic shocks than developed market currencies, says Melia. "This means that changes in the political or economic landscape of an EMC can have a significant impact on the value of its currency. This can make it difficult to predict the future direction of EMCs, and it can also lead to sudden and sharp movements in their prices." Thankfully electronic platforms have made it easier than ever for traders to access a broader range of EM currencies, says Melia. "However, it is important to remember that platforms are only a reflection of the underlying broker's operational capabilities. This means that choosing the right broker is more important than choosing the right platform when it comes to gaining access to a broader universe of EM currencies."

Technology also has the potential to significantly reduce operational risk across many facets of an organisation and can also help brokers to better understand and manage their aggregated currency risk, says Melia. "For large brokers that offer multi-asset services, it is essential to have the ability to analyse currency risk, including both established and emerging currencies, across multiple departments, in real time. This allows brokers to identify and mitigate risks more effectively, and to hedge their exposure more efficiently. An electronic platform and robust back-office system are essential tools for managing aggregated currency risk. These tools allow brokers to track and monitor currency exposure across all of their departments, and to make informed decisions about how and where to hedge their risk."

As mentioned earlier, electronic platforms have also contributed to the growth of NDF trading by helping market participants to better exploit these instruments and in that respect Melia says that StoneX Pro has seen a large increase in demand for its NDF products, particularly in the LatAm region. "NDF trading is growing because traders and corporations are seeking access to emerging market currencies to speculate or to support their corporate needs. Again, electronic platforms are the mediums to trade NDFs on EMCs, but the decision making process should focus on finding a broker who can support all of your currency needs, as well as NDFs."

## SELECTING A PROVIDER

Finally, for firms looking to select a suitable EM electronic trading provider, Van Name cites access to liquidity and ability to support required integration to appropriate destinations as "key factors that will influence a buyside's selection of a trading platform provider for EM currencies so that trading can be as automated and seamless as possible." Whilst Melia mentions various additional factors that need considering including reputation, experience, pricing, service levels, technology, risk management, geographic coverage, and compliance with regulatory requirements. "We firmly believe that to be considered by our clients, the top liquidity providers must excel in each of these categories," he concludes.



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SPECIAL REPORT

## ABBEYCROSS AND THE EM FX PAYMENTS MARKET

AbbeyCross is a B2B FX trading and compliance marketplace or platform for emerging market currencies, co-founded by CEO Mike Robertson who previously ran the cross-border payments business at Bank of America.

There are currently 145 currencies in global circulation and most banks offer a transparent, automated and efficient service for G10 currencies with full straight-through-processing. But it is a different and much more challenging picture when it comes to the EM currencies where banks don't have an onshore presence.

Most of the banks have outsourced the payments process in these markets to one vendor, which, says Robertson, is "problematic". "There are continuity issues from using one provider and best execution problems from only receiving a single rate when you have to show regulators you are executing at fair prices. That is the reality of the EM FX payments market," says Robertson.

AbbeyCross has been developed as an alternative infrastructure to solve some of the problems with EM FX payments. "There has always been competition, especially with the emergence of payment-themed fintechs," says Robertson. "However it takes a significant amount of time for these platforms to onboard new clients. And banks have an extremely limited budget for this, especially for EM currencies where the volumes are much lower. Our strategy is to create an infrastructure where integration is no longer an issue."


Mike Robertson

Robertson says that AbbeyCross won't necessarily make it easier – if a bank wants full API integration, it will take time – but the bank only has to do it once and then gains access to a whole host of payment providers. "We believe it is changing the narrative around EM payments," says Robertson.

"There was a structural issue with EM payments. They are complicated and it differs by jurisdiction. Some require physical settlement and there are different documentation requirements and volume thresholds, so it is a messy combination of several structural issues," says Robertson.

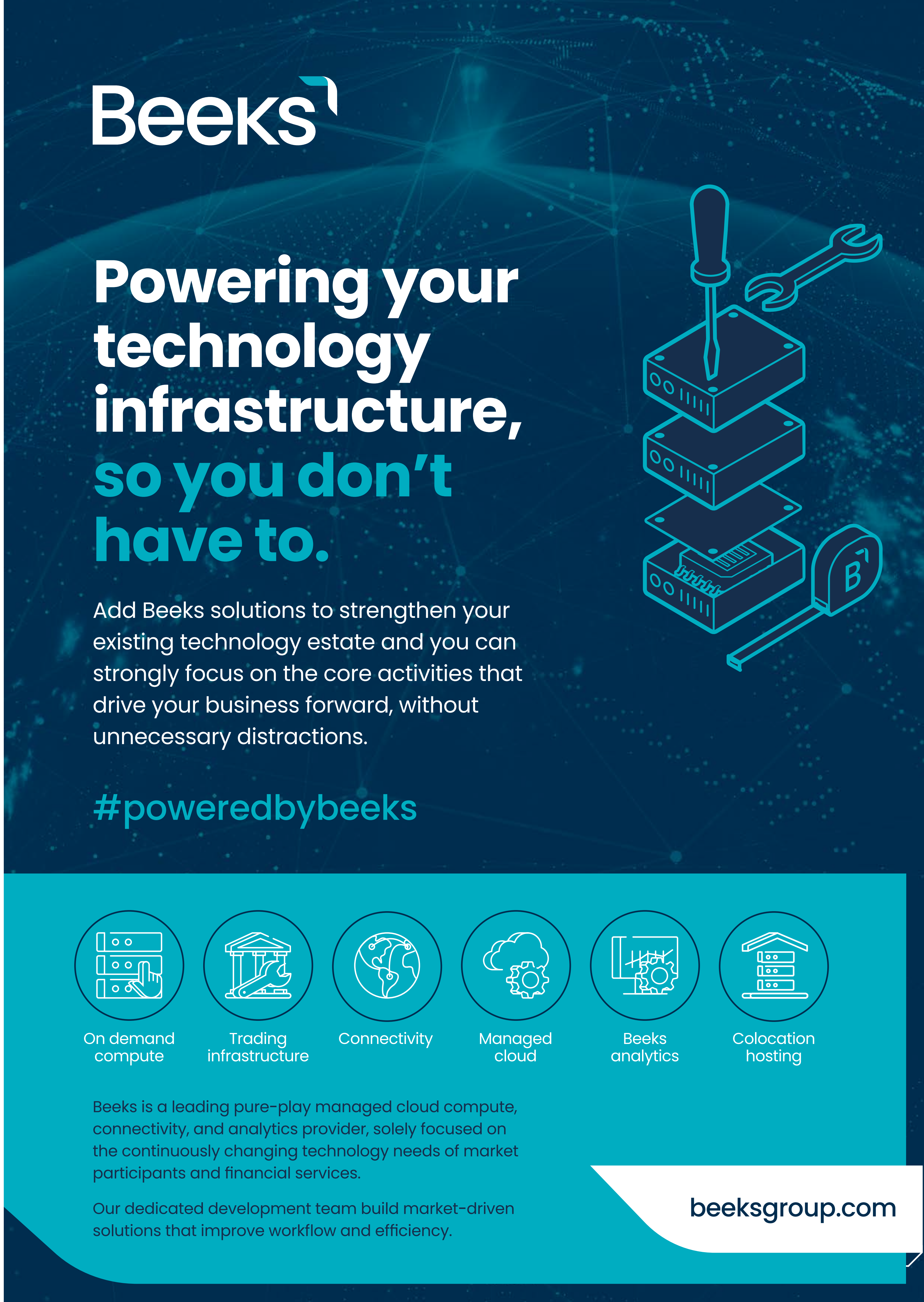
But things are changing. "Volumes are increasing and global trade patterns are changing. China has been the dominant manufacturing centre which has driven volumes into China but now we have manufacturing centres in Thailand, Indonesia and elsewhere becoming manufacturing centre," says Robertson.

That said, EM currency payments still remain a very small percentage of overall payment volumes. An EY/McKinsey report shows that the payments market has $140trillion of volume daily - $100trn is in the same currency and $36trn is in G10 currencies while EM currency payments make up the remaining $3-4trn.

So what is it about the technology that has changed? Much of the technology investment to date has been on the funds settlement and trading side of things and less so on the payments side. Where money has been spent on the payments process, it has focused on the front end and user interfaces rather than the back-office infrastructure. "Legacy technology is really at the heart of it," says Robertson. "We are not necessarily providing new technology but creating a payments marketplace that banks can use to access multiple payment providers."

AbbeyCross is currently at the proof-of-concept phase and plans to have live trading clients by this time next year. "We hope to have live trading with at least one tier one bank, starting with EM payments. We believe it is a game-changer, not just in terms of pricing but also innovation," says Robertson.





# Become the Cloud: How financial exchanges are transforming their relationship with Cloud technology



## PUBLIC VS PRIVATE CLOUD

The financial sector's hesitancy to embrace Cloud Technology is well-known, and for good reason. Questions of security, regulatory requirements, data location sovereignty and preserving legacy systems all rear their head in digital transformation considerations.

Established financial institutions do not wish to compromise their existing platforms; while cutting-edge trading organisations are looking to the cloud for cost-effective infrastructure which enables them to stay focused on their applications.

This mix of requirements makes it increasingly clear that there is currently no public 'one-size-fits-all' network and cloud protocol that can satisfy all participants.While public cloud offers affordability, ease of accessibility, economies of scale, global coverage and flexibility for non-mission-critical operations, vital features indispensable to financial institutions are not included. Consequently, the trade-off between public and private cloud solutions in Capital Markets keep participants, infrastructure providers and regulatory bodies alike on their toes.

## REGULATORY CONTROL

In 2021 the supervisory authorities including the Financial Conduct Authority, the Prudential Regulation Authority and the Bank of England raised concerns over the sector's reliance on a few Critical Third Parties (CTPs) in the arena of fintech infrastructure. There is nervousness over whether the hyper scale cloud providers such as AWS, Google and Microsoft will monopolize the financial sector and threaten the role and function of the Exchanges themselves.

In response the Financial Services and Markets Bill was brought before Parliament in 2022, calling for a tighter regulatory framework to apply to CTPs providing infrastructure services into the finance sector. This Bill is expected to achieve Royal Assent later in 2023. This is in parallel to the progress into EU legislation of the similar Digital Operational Resilience Act (DORA). By passing these acts, EU and UK regulators have recognised belatedly that outsourcing of core technology functions by financial services firms is here to stay.

However, given that the detail of how CTPs will be regulated is left to be resolved in secondary legislation, there is a risk that increased regulatory control of CTPs represents a rather reactionary and unresponsive way to both safeguard and enhance operational resilience in the sector. In a nutshell increased regulation cannot move as quickly as the technology and innovations currently beginning to make themselves known to the market; it does nothing to ensure hyper scale cloud provision becomes more tailored to the specific characteristics of Capital Markets; nor does it enable growth.

## EXCHANGE TECHNOLOGY REQUIREMENTS

As innovative market participants test the digital transformation waters for the sake of increased agility, speed to market and cost-effectiveness, the gap between the capabilities of hyper scale cloud provision and finance-specific technology requirements widens.There are many ways in which public cloud provision falls short of the rigorous necessity for accuracy, simultaneity, security, and data sovereignty, demanded by Capital Markets trading environments.  Public cloud access cannot give any low-latency guarantees, so it is wise to consider whether the internet can provide the carrier-grade connectivity required. For example, some financial applications do not work if the latency is above 5 milliseconds.

In these cases, it falls to the infrastructure specialists in the sector to resolve these issues through hybrid cloud, or ultra-low latency private environments custom built for market participants requiring high levels of throughput and consistent nanosecond processing speeds.

For example, PTP or better grade time synchronisation, support for multicast across organisational boundaries and network-level traffic visibility are distinct examples of capability required by the financial cloud that appear nowhere in the generic cloud canon.

Hyper scale public cloud providers have no pressing need to meet PTP (Precision Time Protocol) requirements. In contrast the financial sector's measurement, control and analytics systems need computer network clocks to be synchronised to within a sub-microsecond of accuracy. Similarly hyper scale cloud offerings have limited use of multicasting technology, since it is not crucial that data is distributed simultaneously. Nevertheless, in dynamic trading environments multi-casting technology is vital to support fair competition.

Network-level traffic visibility allows financial service firms to accurately measure their own and their counterparts' performance and provide a source of truth impartial proof at the very perimeter of their service. Features that provide this, such as traffic mirroring from network devices or layer 1 optical switching, are notably absent from any current hyper scale cloud offering.

## THE EVOLUTION OF THE FINANCIAL CLOUD

Gordon McArthur, CEO of financial cloud infrastructure specialist Beeks Group, comments: "The speed, agility, connectivity, capacity, security and sovereignty required by Capital Markets point towards a different beast of cloud technology than the hyper scale providers are used to." "Shared infrastructure and distributed data are a big no-no in trading environments," McArthur explains. "If you can't pin your data down to a postcode you are in breach of regulations. And if you're relying on shared bandwidth your latency is going to be all over the place when concert tickets are released."

Gordon McArthur

What is emerging is a clear distinction between generic public cloud features and benefits, and the very specific capabilities demanded by financial cloud infrastructure.

"Good as their services are, AWS is not and will never be a specialist financial cloud provider," says McArthur. "No one, least of all the regulators, wants to see AWS or Google or Microsoft morphing their cloud offering to become a financial Exchange," he says."But while the regulators are doing their bit to control the monopoly of CTPs, we've been looking at the problem from the opposite end."

## TRANSFORMING EXCHANGES' RELATIONSHIP WITH CLOUD TECHNOLOGY

McArthur's vision is for Exchanges worldwide to become the cloud themselves. He says: "Since 2011 Beeks has been listening carefully to the needs of capital markets' trading environments, and all our effort has been dedicated to building iterative solutions for them."We are now in a position to offer Exchanges fully managed and monitored connectivity infrastructure with the lowest latency compute and highest-grade security required, not only for their own use, but for their customers too." McArthur concludes: "This puts Exchanges on the cusp of a major evolution from cost centre to profit generator."Public cloud will remain part of the toolset, but Exchanges will have more control over their operation, more insight into their performance and more profit from their business."

### BEEKS EXCHANGE CLOUD OFFERING

Exchange Cloud is a multi-homed, fully configured, and pre-installed physical trading environment, optimised for Exchanges to offer private cloud solutions as a service to their own customers and maintain space for their own internal use. Exchange Cloud has been explicitly designed for global financial exchanges and electronic communication networks (ECNs) and comprises additional analytics features. Utilising high precision timing tools and supporting unicast and multicast datasets, the platform can be deployed in any exchange anywhere in the world and white labelled by exchanges across different asset classes.

Image by Shutterstock

# Cutting through the hype: Where AI is already making its presence felt in FX

**Artificial intelligence continues to extend its influence over FX. But despite advances in areas such as conversational interaction, no one expects the machines to take over any time soon. Paul Golden investigates.**

Paul Golden

The extent to which artificial intelligence is utilised across the FX market is hard to quantify. One commonly referenced statistic is that around 90% of traders use AI and applications such as predictive analytics as part of their wider trading strategy.

What can be said with certainty is that banks are increasingly integrating the technology - and associated technologies such as machine learning and natural language processing - into their trading platforms.

For example, in May 2023 HSBC launched AI Markets, a digital services offering that uses purpose-built natural language processing to improve institutional investors' interaction with global markets.

This functionality can be divided into three categories, the first of which is digitisation of single tasks with a rigid communication interface between machines, and between machine and humans where the challenges are to bring these functions together to build a complex system for complex tasks, and communicating with that system. Developments such as ChatGPT and the evolution of large language models bridge this gap and make the next category of functionality - conversational interaction with data, models, and systems – achievable with the next few years according to HSBC, which expects the third category (large conversational intelligence) to become applicable to trading within the next 3-5 years.

The broker community was quick to embrace AI, with most FX brokerages having integrated the technology into their platforms over the last few years to help trading clients who don't have access to expensive tools such as Bloomberg/Refinitiv terminals to make more informed decisions. As well as delivering real time and market analysis, AI is also being used to enable copy trading.

MT5 traders are able to use ONNX (open neural network exchange) models in their platforms, while FlexTrade Systems recently introduced AI-driven functionality in its multi-asset execution management system that traders can use to ask verbal or written questions such as 'what is the value of my Swiss orders over 10% ADV?'

### OECD PAPER

A paper published by the OECD in 2021 (Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges and Implications for Policy Makers) outlined the opportunities and challenges presented by the use of these technologies in a trading environment.

## Cutting through the hype: Where AI is already making its presence felt in FX

In highly digitised markets such as FX markets, AI algorithms can enhance liquidity management and execution of large orders with minimal market impact by optimising duration and order size in a dynamic fashion based on market conditions. Traders can also deploy AI for risk management and order flow management purposes to streamline execution and produce efficiencies.

However, the OECD warned that the lack of explainability of AI model processes could give rise to potential pro-cyclicality and systemic risk, and could create possible incompatibilities with existing financial supervision and internal governance frameworks - possibly challenging the technology neutral approach to policymaking. So what makes a complex global market like FX - which has many different participants reliant on various technologies - a good fit for AI? According to Tim Carmody, chief technology officer at IPC Systems, the complexity and global nature of the FX industry is the most important empowering factor.

"Even more so than other asset classes, FX is impacted by geopolitics and regulatory and business dynamics on a global scale," he says. Not only is it globally complex - FX does not correlate with isolated or predictable events, but is rather impacted by random combinations of a lot of different factors.

"The massive amount of fast moving data that is generated as a result makes AI analysis (and speed) highly suited to FX," adds Carmody. "At the same time, the very liquid nature of FX markets also favours the use of AI in order execution."

Meanwhile Alexander Culiniac, chief technology officer at SmartTrade Technologies also refers to the complexity of the FX market as one of the factors that make it an ideal environment for the application of artificial intelligence, in addition to the huge volumes of data generated and the speed with which the market moves.

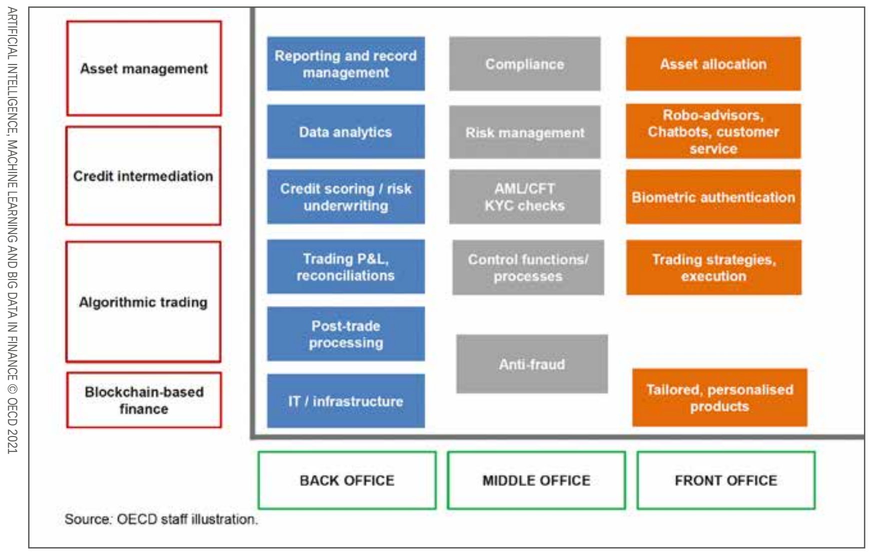
"AI's ability to process vast amounts of varied data in real-time, its predictive capabilities, and its aptitude for high frequency trading make it indispensable in this environment," he says. "Additionally, it enhances risk management by detecting potential market shifts, automates routine tasks, and carries out market sentiment analysis through natural language processing. Its adaptive learning capabilities also allow it to respond to dynamic market changes."

However, Culiniac cautions that while AI is a powerful tool, its effectiveness is dependent on the quality of the data it is trained on and it may not always accurately predict unforeseen events.

### EXPLOITING THE BENEFITS

One of the obvious questions in any discussion of the use of AI in FX is whether the buy-side or sell-side is best placed to exploit the benefits of AI and what factors will influence utilisation of the technology. Culiniac reckons this is something of a moot point in that the distinction between buy- and sell-side is increasingly a grey area with both taking and making to some extent. "Sell-side platforms are naturally suited to exploit AI given that they can access multiple sources of information to create proprietary data sets," he says. "Of course, there are considerations around data ownership and licences. However, the ability to access multiple sources of information and derive proprietary data sets gives these players an advantage."
"We see our sell side clients looking at AI to provide clear actionable data. Client management teams are swamped by reports and analyses these days - the issue is not that they don't have data, it is that they have too much information."

AI and machine learning tools developed by SmartTrade enable banks to see how clients are segmented in ways no human can ascertain. Once segmented, clients can be targeted in terms of upselling and marketing to make sure the bank's client interactions are relevant and offer value. Further practical examples of AI/machine learning logic include looking at how client behaviour patterns change in terms of how and




Examples of AI applications in some financial market activities

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## Cutting through the hype: Where AI is already making its presence felt in FX

**“The massive amount of fast moving data that is generated as a result makes AI analysis (and speed) highly suited to FX,”**

Tim Carmody

when they trade, then automatically generating alerts for sales teams for clients who may need more attention. These AI generated alerts and signals can also be combined with proprietary algos hosted in the SmartTrade AlgoBox allowing a bank, if it wishes, to have automated reactions to these actionable insights.

“This automation is clearly the direction of travel of the front office market,” says Culiniac. “How long it will take to develop and to what extent full automation will prevail of course depends upon the specifics of the bank, its clients, and the types of action we are considering.”

Carmody agrees that both buy- and sell-sides can benefit from using AI, although he suggests its access to vast resources probably gives the sell-side the edge.

When asked how AI and machine learning is already being used in FX trading, Carmody says they are being deployed to synthesise data effectively from a large number of sources, with applied ‘interpretation’ such as sentiment analysis.

“This data analysis is combined with market research and historical pattern recognition,” he says. “Real time transcription of voice trading is also being adopted more widely to create another source of data to feed into trading engines, alongside algorithmic order execution.”

Culiniac says AI and machine learning have already revolutionised many aspects of FX trading.

“They are used in data analysis to process vast quantities of market data to identify patterns and predict future price movements,” he explains. “In market research, AI algorithms - particularly those involving natural language processing - analyse sentiment from diverse sources to understand market influences.”
For liquidity management, AI assists by forecasting supply and demand in the FX market, helping to pinpoint the optimal timing for trades and identify the most liquid trading pairs.
“In risk management, AI systems identify potential market shifts or volatility spikes, adjusting trading strategies accordingly to mitigate risks,” adds Culiniac, who goes on to outline the potential risks of deploying AI that echo with some of the observations made in the OECD report.

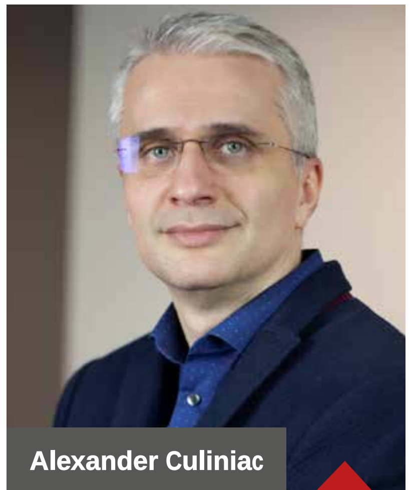
### RISK CONSIDERATIONS

“Deploying AI in loosely regulated markets such as FX carries risks associated with the concentration of power, systemic risk, and lack of transparency,” he says. “The use of sophisticated AI systems may further centralise trading power in large institutions, potentially exacerbating existing market inequalities.”
AI-driven trading can also increase systemic risk if numerous systems are trained on similar data and implement analogous strategies, which could lead to a cascade of trades amplifying market volatility during certain conditions.

“Finally, AI systems - especially those based on deep learning - are often perceived as ‘black boxes’ due to their complex and non-transparent decision making processes, which poses challenges for accountability,” continues Culiniac.

Due to the perceived relative newness of the technology, some SmartTrade Technologies clients have chosen to use AI/machine learning tools to derive actionable information from their data and to enable them to have better conversations with clients, liquidity providers and internal stakeholders rather than to fully automate mission critical processes.

“It is almost inevitable that as market acceptability increases and the technology matures we will see more and more aspects being fully automated in the front office as banks



Alexander Culiniac

**“In risk management, AI systems identify potential market shifts or volatility spikes, adjusting trading strategies accordingly to mitigate risks,”**





## Cutting through the hype: Where AI is already making its presence felt in FX


race to compete in deriving value from their data," adds Culiniac.

As a non-regulated market there are by definition fewer systemic safeguards, such as circuit breakers that provide equities and other markets with release valves in the event of anomalistic situations. "This means a greater risk of AI-generated events and so-called 'flash crashes'," warns Carmody. "The combination of a lack of regulation and vast amounts of source data also increases the risk of bad behaviours where intentionally inaccurate or misleading information is fed into the data sphere to influence the market."

He suggests the FX industry should take a cautious approach with respect to the introduction and adoption of AI, keeping a close eye on oversight and governance.

"The rise of generative AI or Gen AI increases the risk of 'machine mis-learning' and resultant confusing patterns, and even the generation of new, non-deterministic patterns," adds Carmody. "This could be amplified further as more and more counterparties rely on Gen AI - as the high frequency equities trading segment learned (the hard way) as it matured."

### LESSONS FROM OTHER MARKETS

Culiniac reckons there are a number of lessons FX can learn from how AI is being applied in other markets, particularly the application of sentiment analysis.

"AI's ability to analyse diverse textual data such as news and social media posts can help gauge market sentiment, aiding traders in predicting market trends," he says. "This is often used as an alternate source of market probability on equity trading desks. The technology can also be applied in the FX market to understand the influence of global economic sentiment on currency values."

In a recent article on the Refinitiv website, the company's head of FX sell-side trading, Bart Joti, suggested teams perform better when data and AI techniques are coupled with human insight. He noted that new skill sets are becoming increasingly important so that individuals - particularly in trading and sales roles - can use AI and machine learning tools to make decisions based on market and reference data.

While the role of FX traders will continue to be augmented by more and more AI-led functions, Carmody reckons it is impossible to predict whether and how Gen AI might fully replace the physical trading function.

"More than 30 years ago when EBS and Reuters launched the first fully automated FX 'broking' platforms, the same concerns were expressed about the demise of the human touch in FX trading," he says. "More recently, automated and algorithmic trading technologies have also challenged the traditional FX broker/trader model. Yet physical trading rooms and traders still very much exist as our 200,000-strong network of global trading participants will attest."

### CONCLUSION

Whilst the power and potential of AI cannot be ignored - and may well end up as the most powerful technology in the trading toolbox, Carmody believes there will likely always be a need for human engagement at both a strategic and a tactical level. Culiniac agrees that despite AI's transformative potential in FX trading, it is unlikely to completely replace human traders in the foreseeable future.

"AI, while adept at analysing vast amounts of data and identifying patterns, struggles to comprehend context as humans do and may find it challenging to interpret unprecedented events or situations outside established patterns," he says.

Moreover, trading involves complex ethical and legal decisions that are difficult to automate and where human judgement is indispensable. "Furthermore, even as AI becomes increasingly integral to trading, human oversight remains crucial to manage risk, ensure accountability, and make decisions when AI encounters unfamiliar situations," concludes Culiniac. "Therefore, the future of FX trading will likely involve a synergistic partnership between AI and human traders, combining their respective strengths."

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