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COVER INTERVIEW

WITH JAY MOORE & EMIN TATOSIAN

CO-FOUNDERS OF FX HEDGEPOOL

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What's being done to enable more informed decision making

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Delivering ever more powerful solutions for the FX buy-side desk

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Gathering insights about this fast growing e-FX powerhouse

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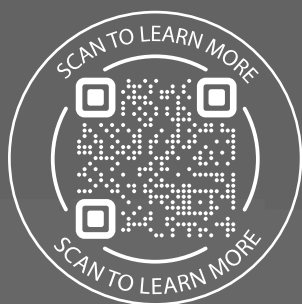
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July 2024

Our trading operations feature in this edition looks at FX liquidity management and explores how this critically important task is being made easier and more effective by the arrival of new technology and especially data analytics. Both consumers and providers are now making far more use of data which should allow for further systematic liquidity enhancements on both sides in the future. As FX liquidity management decision making becomes increasingly automated the benefits will be felt across the whole industry.

This month Singapore is the focus of our regional perspective. Every year we keep reporting on the various factors that are working in the city state's favour and which are turning it into a global FX powerhouse. Singapore's geographic location and proximity to fast growing economies are important in facilitating e-FX development as is the forward thinking approach it takes to new technology. With several top global banks housing their regional FX sales and trading teams in Singapore it now offers a deep and liquid market for the trading and hedging of G10 currencies, as well as Asian emerging market currencies. But perhaps the most important support the city state is getting comes from a pro-active regulator with a vision. MAS has always been keen to develop Singapore's FX market to serve the growing trading and hedging needs in the region and the regulator continues to work closely with market participants such as banks and trading platforms to build up Singapore's e-trading infrastructure. The Financial Services Industry Transformation Map (ITM) 2025 builds on that work and sets out MAS' growth strategies to further strengthen Singapore's position as a leading international financial centre in Asia. The strategies under ITM 2025 include deepening capabilities across key asset classes to enhance Singapore's value proposition as a financial centre still further. With key liquidity providers anchored there and initiatives like ITM 2025, the electronic FX ecosystem in Singapore is likely to continue to go from strength to strength.

A final reminder that our FX Settlement Risk Supplement has just been published and can be accessed via the e-Forex website.

As usual I hope you enjoy reading this edition of the magazine.
Charles Jago, Editor

- Susan Rennie**
Susan.rennie@sjbmedia.net
Managing Editor

Charles Jago
charles.jago@e-forex.net
Editor (FX & Derivatives)

Charles Harris
Charles.harris@sjbmedia.net
Advertising Manager

Ben Ezra
Ben.ezra@sjbmedia.net
Retail FX Consultant
- Michael Best**
Michael.best@sjbmedia.net
Subscriptions Manager

David Fielder
David.fielder@sjbmedia.net
Digital Events

Ingrid Weel
mail@ingridweel.com
Photography

Tim Hendy
tim@thstudio.co.uk
Web Manager

SJB Media International Ltd
Suite 153, 3 Edgar Buildings, George Street,
Bath, BA1 2FJ United Kingdom
Tel: +44 (0) 1736 74 01 30 (Switchboard)
Tel: +44 (0) 1736 74 11 44 (e-Forex editorial & sales)
Fax: +44 (0)1208 82 18 03

Design and Origination:
Matt Sanwell, DesignUNLTD
www.designunltd.co.uk

Printed by Headland Printers

e-Forex (ISSN 1472-3875) is published bi-monthly
www.e-forex.net

Membership enquiries
Access to the e-Forex website is free to all registered members. More information about how to register can be found at www.e-forex.net

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FairXchange releases Horizon Sentinel

FairXchange has launched Horizon Sentinel®, an AI-driven alerting tool that identifies commercially relevant changes to a Financial Institution's liquidity and counterparty activity as soon as they occur. Sentinel dramatically reduces the time Financial Institutions spend on analysing their FX liquidity data, freeing up time to maximise the opportunities identified. In addition to benefiting traders and salespeople, Sentinel is able to automatically notify compliance and management teams of specific

changes they may need to be aware of, such as a significant change in transaction costs or notable changes in trading activity from a particular



Guy Hopkins

set of clients. Guy Hopkins, Founder and CEO of FairXchange said, "During our testing period, Sentinel has had an overwhelmingly positive response, transforming conversations between liquidity consumers and liquidity providers. In high complexity trading environments, it is becoming progressively harder for people to keep on top of all the recent developments. Sentinel watches your business for you and provides timely, automated notification of important changes as soon as they occur."

BNP Paribas deploys CobaltFX analytics solution

BNP Paribas has expanded its partnership with CobaltFX by deploying the firms recently-launched CobaltFX analytics solution. CobaltFX says that BNP Paribas is now covering in excess of 100 counterparty banks across 12 ECNs and the use of the analytics package allows it to hone its use of credit even further by highlighting where it can be reduced, while at the same time expanding the bank's ability to trade in the markets. "We see this as an important initiative to address regulatory and industry body

concerns about the over-allocation and inefficiencies of credit distribution



Joe Nash

on dealer-to-dealer venues," says Joe Nash, head of global macro digital at BNP Paribas. "Moreover, this approach, combined with CobaltFX analytics allows us to right size our limit for each counterparty whilst improving market access with them." Darren Coote, CEO of CobaltFX, adds, "This systemic problem has been long over-looked but there are a group of leaders in the industry that understand the benefits of this unique approach. We are very grateful for BNP Paribas' leadership in this regard."

Digital Vega partners with FactSet

Digital Vega's FX Options trading solution has been integrated with FactSet's FX Execution Management System, Portware. The partnership will allow FactSet to extend its product coverage to include FX Options, in addition to Fixed Income, Equities, Futures, and FX.

Mark Suter, Executive Chairman and Co-Founder, Digital Vega, said: "Growing regulatory pressure and increasing competition is driving demand for more automated and efficient solutions. By partnering with

FactSet we are able to extend our coverage to large Asset Managers, which will deepen liquidity for the



Mark Suter

benefit of all our clients. We are fortunate to be recognised as a leader in our field, and as a specialist provider of FX Options technology we have successfully automated some of the most complex trading workflows. We look forward to continuing our collaboration with FactSet." John Marchese, Head of FX Sales at FactSet, added: "Adding FX Options to Portware was a logical decision, which will provide our clients with high levels of workflow automation by our EMS, combined with a deep pool of liquidity from Digital Vega."

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LMAX Group launches FX NDF trading in Singapore and London

LMAX Group has launched FX Non-Deliverable Forwards (NDFs), available to trade in two matching centres, Singapore (SG1) and London (LD4). The launch follows the receipt by LMAX Exchange, the Group's global institutional FX exchange, of a Recognised Market Operator (RMO) licence from the Monetary Authority of Singapore (MAS). The FX NDFs are traded on a central limit order book (CLOB), delivering transparent price discovery and precise, consistent execution to all market participants

including banks, non-banks, proprietary trading firms, institutional brokers, asset managers and buy-side institutions. Matt DellaRocca, Head of Liquidity and Analytics, APAC, LMAX Exchange, added: "We are delighted to go live with this offering, which will provide local FX market participants with access to an expanded pool of NDF liquidity through a regulated exchange venue and a CLOB model that delivers efficient market structure and transparent, precise, consistent execution. We look forward to supporting our global customers as we

expand our FX offering for customers operating in the Asia Pacific region."



Matt DellaRocca

Laser Digital partners with 4OTC

4OTC, the provider of low latency connectivity services for Digital Assets and FX, has announced that Laser Digital, Nomura's digital asset subsidiary, has integrated 4OTC's 1API service for ultra-low latency connectivity to multiple exchanges globally.

As a leader in digital asset trading, Laser Digital required access to data and liquidity from across a fragmented market to optimise liquidity provision to its clients. 1API was selected to streamline connectivity across numerous digital asset exchanges

globally, providing a robust, secure, scalable and ultra-low latency service. By



Johannes Woolard

connecting to 4OTC's 1API service, Laser Digital can access multiple liquidity pools quickly and simply. "Fragmentation in digital assets raises real challenges in time to market and maintaining consistent high quality execution. This means that we need ready to use institutional grade infrastructure to access liquidity from multiple exchanges," said Johannes Woolard, Head of Front Office Technology at Laser Digital. "4OTC's 1API service enables us to connect efficiently to a majority of the digital asset markets."

Nonco secures first OTC trade via Finery Markets



Konstantin Shulga

Finery Markets, the non-custodial crypto ECN and the provider of an SaaS trading platform for institutional clients has announced a partnership with digital assets firm Nonco which operates as a market maker for top crypto and stablecoins. Catering to Finery Markets' growing list of institutional clients, Nonco has successfully executed its first transaction through FM Liquidity Match, the platform which combines cutting-edge matching engine with instant access

to deep liquidity across 150+ coins. Konstantin Shulga, Finery Markets CEO, commented: "Nonco joins Finery Markets at the particularly exciting moment as we have witnessed a double-digit growth in demand from institutional players for quality crypto liquidity. Our partnership will undoubtedly contribute to crypto institutions seeking to enhance their trading setup and receive better asset prices, while minimizing counterparty risks."

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FX Liquidity Management:

How the business is evolving and what's being done to enable more informed decision making.



Nicholas Pratt explores why FX Liquidity Management remains a challenging and complex task and what's being done especially with data to make the business of doing it more effective.



Nicholas Pratt

Liquidity management continues to be a critically important topic in the FX market due to persistent market fragmentation and the spawning of more players, venues and platforms. Added to that is the pressure on FX trading firms from clients seeking more reliable access to liquidity and a diverse range of liquidity providers as opposed to the single provider approach of the past. Throw in

some regulatory tailwinds, such as best execution rules and the FX Global Code of Conduct, and the list of catalysts is complete.

Fortunately, technology has advanced to offer some assistance to market participants – from brokers to liquidity providers to liquidity takers. The key developments have been around data. For example,

application programming interfaces (APIs) have enabled data to be exchanged between counterparties, and more advanced analytics have allowed this data to be turned into actionable insights that can not only improve performance and increase transparency but also help to foster a more productive relationship between liquidity makers and takers.

"..the only sustainable approach is to invest in proper liquidity management, where source flows are segregated according to flow profile and priced by a cultivated set of liquidity providers.."



Bailey White

TECHNOLOGY ADVANCES

That said, advances in technology have also led to the complexity that makes the FX market so challenging. Technology has bred fragmentation in the FX market and led to an ever-increasing number of liquidity providers, venues and platforms, says Bailey White, director of electronic trading and execution at Australia-based multi-asset prime broker 26 Degrees Global Markets. "Most platforms offer functionality to consume liquidity from multiple liquidity providers (LPs) and venues. It is easier than ever for a liquidity consumer to over-aggregate or execute inefficiently. This is particularly relevant in the retail broker market, where spreads receive a disproportionate level of attention due the competitive nature of that market. There is always a temptation to add liquidity to improve pricing in the short term. In the long term however, the only sustainable approach is to invest in proper liquidity management, where source flows are segregated according to flow profile and priced by a cultivated set of liquidity providers who specialise in managing that type of flow," says White.

"In the retail broker space, regulation and client expectations are also driving the requirement for additional redundancy. All aspects in the chain of market access must be made highly resilient with multiple levels of redundancy. Prime brokers, LPs, application programming interfaces (APIs) & platforms. Ultimately, redundancy has become a critical differentiator for providers, such as prime of primes or platforms, in the FX market."

A key development in liquidity management is the increasing reliance on data, says White. "Consumers are using data to better understand the value of their flow, and therefore demand better pricing from liquidity providers. Likewise, LPs are providing more advanced feedback on inefficiencies in execution that lead to market impact. In combination, these factors are contributing to more efficiency in liquidity provision and consumption. Different flow profiles are being more optimally priced, rather than subsets of impactful flow resulting in higher execution costs for benign subsets. This is an area where 26 Degrees has placed significant emphasis with its retail broker client base and panel of liquidity providers," says White. "Brokers with access to the best pricing have a competitive advantage, and the best way to access the most competitive pricing is to segregate hedge flows according to flow profile and market impact. 26 Degrees helps our clients to identify different flow profiles and execute the corresponding segregation

to ensure different flow profiles access a pool of optimal liquidity – whether that be for benign skew-safe flow, or flow exhibiting greater market impact," says White

"Liquidity management is now much more about the use and communication of data than it is about relationship alone. This applies to both the buy and sell side, and those that do not commit to a data-driven approach are being left behind. Data analysis and increasingly machine learning techniques are critical to the flow segregation process that enables liquidity consumers to demand more competitive liquidity and lower execution costs," says White.

"Similarly, liquidity consumers are more actively using data to optimise their liquidity panels for different flow profiles. For example, data can reveal that the cost of rejects for a particular LP may necessitate their removal or replacement. In addition, the post-trade market impact profiles for different LPs are also scrutinised by sophisticated liquidity consumer/aggregators to ensure that the risk management of LPs is in-line with expectations for that pool. It only takes one LP to exit risk more aggressively for market impact to be amplified, leading to wider spreads and higher total execution costs in the long-term," says White.

It is important for FX trading firms to be able to prove that FX liquidity management is being performed effectively, says White. "It can be an expensive and time-consuming function. Ultimately, success is measurable though – for many firms, this may be a reduction long-term execution costs, for others it may be the competitiveness of quoted spreads across the trading day. These measures of success can

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"It is fundamental that the management of liquidity be dynamic and evolve with client and regulatory requirements, changing almost daily."



Antony Parsons

be tracked via data to audit the success of the liquidity management function."

In terms of future developments, White foresees a continuation of the existing trend of fragmentation. "Trade flow will be increasingly segregated based on impact profile and execution method. Likewise, we expect an increase in the number of venues and platforms through which FX liquidity is commonly accessed. It is important that liquidity providers can simplify the liquidity management function and provide data that supports decision-making. Traders and liquidity managers should be able to access analytics on their execution quality, including market impact. They should also be able to discuss with their providers about how different execution styles or flow segregation might change the quality of liquidity that they can access," says White. "The latest generation of liquidity analytics are key to this process."

HIGHER STANDARDS

The sheer variation of client requirements, as well as increasingly high standards expected of pricing

and execution, means managing FX liquidity is even more important than ever, says Antony Parsons, head of liquidity at prime broker and liquidity provider Finalto. "Ensuring that the most sustainable liquidity is sourced from genuine market makers who limit market impact is imperative to providing great liquidity to clients. Avoiding the temptation to over-aggregate, but instead building core relationships with fewer LPs who will build directional skew into their price is vital to construct a competitive book to clients. This asset needs to be protected by ensuring liquidity is only passed onto specific clients where pricing will not be recycled through ECNs. It has become very easy for market participants to access trading venues as both a maker and a taker which can lead to skewed prices being leaked. If an LP identifies this, they will pull their liquidity," says Parsons.

There is also more pressure on trading firms to seek more reliable access to liquidity, acknowledges Parsons. "With greater market access to transaction costs analysis (TCA) systems, it is very easy for firms to see if they are paying too much in execution costs and so will have the need to look for alternative liquidity sources. While having a single provider is not ideal for reliability reasons, it makes sense to diversify to create healthy competition among LPs. Ensuring access to a broad range of liquidity helps when the requirement for bespoke setups arise from clients."

Data has become more important than ever and the ability to share certain statistics automatically is

becoming more popular among many relationships, says Parsons. "A real transparency about origination of flow helps to ensure liquidity is constructed in the most optimal way. A proactive approach to 'liquidity & tag' management by consumers is now expected by providers as analytics packages are now almost standard within the industry. As always, trust and track record of historic performance from both sides still hold merit to the future relationship," says Parsons. There is also a technology angle to the increasing demand for more data and analytics, says Parsons. "Post-trade analytics systems and access to raw trade/price data are the core to any good FX liquidity setup. The usage of a front-end system to monitor aspects such as market impact & execution costs makes day to day running efficient. However, the ability to view and query raw data sets takes analysis to a higher level – this gives the ability to 'slice and dice' data in customised ways which may not be included within the standard package platform. APIs between consumers and providers for data sharing is becoming more popular as it allows providers to make informed decisions on their pricing metrics very quickly without the need for manual file sharing," says Parsons.

There are many ways analytics help consumers beyond execution benchmarking, from simple monthly LP rankings or indicators of pricing changes from a specific provider, says Parsons. "It can allow providers to spot patterns in consumers trading styles that may need to be addressed but also give consumers the ability to highlight specific 'opportunities' for the provider. TCA is necessary for any trading firm so using the specific tools will help ensure the liquidity sourced is the most optimal – any smart order routing will take these



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"Data science represents the core of the activity of a liquidity manager as it allows us to have a clear picture of performance both on the liquidity provision and consumption end,"



Andrea Sanna

analytic results into consideration to minimise execution costs. A great benefit of shared data and analytics is its ability to open a dialogue between both sides and further enhance the liquidity and relationship," says Parsons.

On the subject of auditing FX liquidity management activity, Parsons says it is important that procedures are reviewed often to ensure what was relevant yesterday is still useful today to maintain competent liquidity. "It is fundamental that the management of liquidity be dynamic and evolve with client and regulatory requirements changing almost daily. Efficient and easily changeable reporting based on raw data sources for topics such as 'best execution' is certainly an advantage."

So what will the next generation of FX liquidity management tools look like and what steps are being taken to realise these ambitions? On this Parsons agrees with White. "Data is

important and the ability to routinely share between providers/consumers is growing even more popular which should allow for further systematic liquidity enhancements on both sides in the future," he says. "It will open up new avenues of conversation which leads to decisions being even more data driven rather than relationship based."

MARKET FRAGMENTATION

FX liquidity management remains challenging due to several factors but especially because of market fragmentation caused by an increasing number of players, venues, and platforms and a lack of centralized flow, says Andrea Sanna, head of execution and liquidity management at ALP Financial (AlpFin).

"This aspect makes it difficult for dealers and brokers to access consistent and reliable channels. An additional layer of complexity is represented by regulatory changes, market volatility and the ever-evolving technological landscape," says Sanna. AlpFin addresses these challenges by focusing on its distribution channels and liquidity sources with the aim of competitive pricing and low execution times. "This approach helps mitigate the impact of market fragmentation and ensures efficient liquidity management," says Sanna.

Competition has made liquidity management a critical issue and led trading firms to seek a more diverse approach that is not reliant on a single provider. "Trading firms in the FX market face pressure to maintain a competitive edge and ensure reliable access to liquidity," says Sanna. "Relying on a single provider can expose firms to counterparty risk, limited price competitiveness, and liquidity shortages during volatile conditions. Diversified



The relationships between liquidity providers and consumers are shaped by price competitiveness, skew safety and performance monitoring



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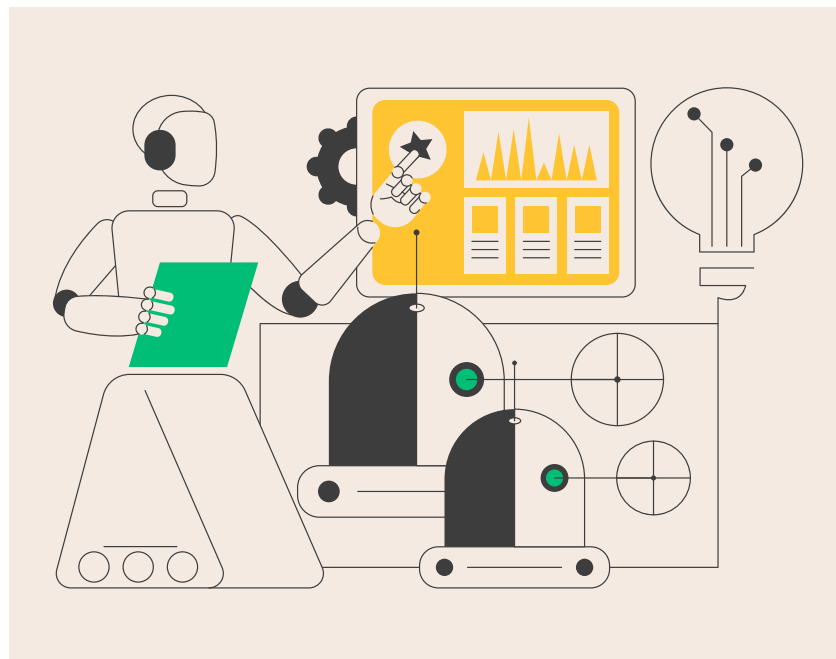
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Reliable data and enhanced analytics - including benefits from the adoption of artificial intelligence (AI) - are key to improving FX liquidity provision outcomes

sources of liquidity across products and regions reduces dependency on a single provider, enhances price competitiveness, and mitigates risks associated with market volatility." The relationships between liquidity providers and consumers are shaped by price competitiveness, skew safeness and performance monitoring, says Sanna.

Consequently, AlpFin has looked to partner with analytics firm Lucera to provide data to both liquidity takers and makers. According to Sanna, these analytic capabilities allied with reliable liquidity "foster strong and credible relationships with clients, ensuring mutual benefits and long-term collaboration".

"Data science represents the core of the activity of a liquidity manager as it allows us to have a clear picture of performance both on the liquidity provision and consumption end," says Sanna. "At AlpFin we put all our focus on providing to our customers and LPs actionable information that enables traders to take immediate actions to improve their pricing competitiveness or reduce the market impact of their

flow. The focus on transaction costs analysis is paramount for us at AlpFin and we do think that pre and post TCA metrics will become a pivotal tool in the coming years also for the less sophisticated players."

Technology, including application programming interfaces (APIs), is crucial for FX liquidity management as it enables seamless integration, real-time data exchange, and automated trading strategies, says Sanna.

"APIs facilitate direct communication between trading platforms and liquidity providers, enhancing execution speed and accuracy in pricing. The adoption of FIX API communication standards delivers benefits such as improved operational efficiency, better risk management frameworks opening the door to efficient algorithms that optimize liquidity sourcing and execution, ultimately leading to reduced execution costs and enhanced trading performance," says Sanna.

It is also helpful for trading firms to audit existing FX liquidity management activities because it identifies

inefficiencies, potential risks, and areas for improvement, says Sanna.

"At AlpFin we put a lot of effort in improving our internal liquidity management processes to provide smoother services to our clients and to guarantee stable liquidity provision. Further steps to achieve a successful audit include defining clear objectives, gathering comprehensive data across all liquidity management activities employing advanced analytics to scrutinize data whilst benchmarking performance against industry standards. Engaging independent experts for an unbiased evaluation and regularly updating audit processes to adapt to market changes are also critical."

In Sanna's view, next-generation FX liquidity management will be characterised by increased automation, advanced analytics and greater use of tools that allow to digest and interpret large datasets. "We think that artificial intelligence will play a pivotal role in this respect together with the possibility to distribute and consume data via API. The usage of spreadsheets and standard reports will instead become less common but still human intervention and bespoke analysis will be requested by liquidity consumers and liquidity providers. These technologies will enable more precise liquidity analysis, real-time risk management, and proactive decision-making."

CHALLENGES AND OPPORTUNITIES

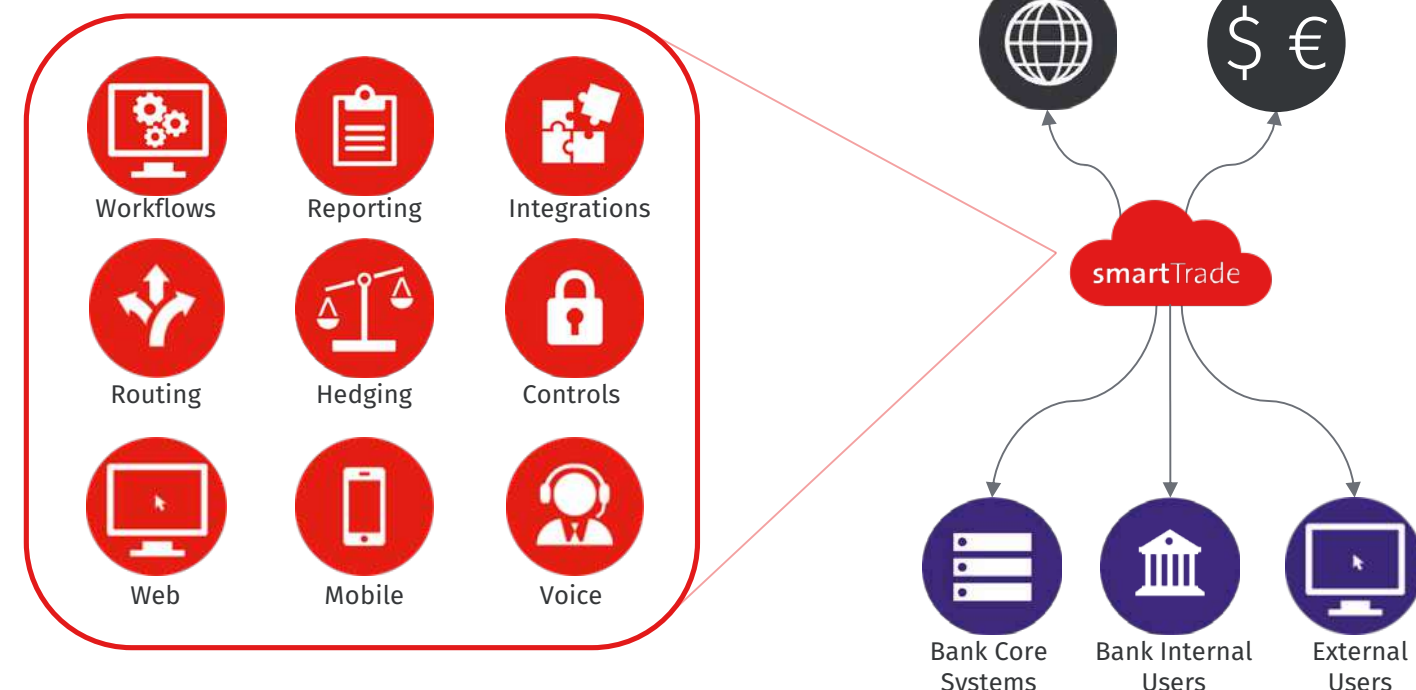
The large and still growing number of FX trading venues is creating both challenges and opportunities for trading clients, says Stephen Totten, managing director - head of institutional and quantitative products at oneZero. "There are dozens of ECNs and a very large number of bank makers, each with their own

smartTrade

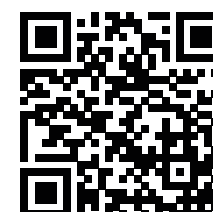
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“Ideally, FX trading firms should be having conversions with their LPs on a regular basis so that they are able to implement technology-assisted improvements in their pricing and risk management,”



Stephen Totten

protocols, matching rules, order types and liquidity styles. An experienced technology partner can help firms to navigate this complex liquidity environment in a more efficient way, not only from a connectivity point of view, but also with respect to data, where our analytics and reports can really help customers understand how to optimise their liquidity and execution.”

The adoption of more sophisticated algorithmic trading strategies is also placing a premium on the use of technology that can help algos to deliver their full benefits, says Totten. “In addition, the trend towards different native order types being offered by competing venues is also creating opportunities for clients, particularly where we see an increasing number of market makers allowing selected customers to access their end franchise, by posting liquidity.”

The pressure on FX trading firms to seek more reliable liquidity access is steadily increasing, says Totten. “Renewed macroeconomic volatility means that there is greater disparity

between liquidity providers in various currency crosses at different times of the day, and under market conditions that can be significantly affected by factors such as the release of key economic data, like the US payroll or inflation announcements. Fortunately, increasing numbers of banks now have more access to sophisticated technology tools that allow them to run complex FX risk management strategies with a robust set of automated controls, show trading axes on a disciplined basis and provide high quality liquidity on a 24x5.5 basis.”

Reliable data and enhanced analytics - including benefits from the adoption of artificial intelligence (AI) - are key to improving FX liquidity provision outcomes, says Totten. “The ability to turn trade data into actionable insights empowers our clients to understand their client flow, associated hedges, and the intricate relationships they have with their liquidity providers.

“Creating reliable data pipelines is challenging and many industry solutions are undermined by weak data sets and unreliable connections and data collection points. We record every liquidity provider tick that enters our system, amounting to over 10 trillion quotes monthly, for example. This wealth of data is securely stored in the cloud and made readily available to our clients,” says Totten.

OneZero has also developed tools to monitor LP performance, such as its Maker Pool Reply tool which tests new liquidity configurations without assuming the risk of real-world implementation. It is also useful for firms to audit their existing liquidity

management activities, says Totten. “Ideally, FX trading firms should be having conversions with their LPs on a regular basis so that they are able to implement technology-assisted improvements in their pricing and risk management, and ensure they’re continuously adapting to market conditions and changes in their own franchise or trading strategies.”

This regular review, combined with analytics, helps a bank spot both problems and opportunities in their liquidity, and to work with their providers to ensure both sides have a mutually beneficial relationship, says Totten, “Maker Pool Replay helps clients undertake a deeper audit of their providers, where we can backtest historical trades against a range of makers and liquidity streams, and deliver accurate models of how any changes would impact PNL and other key metrics.”

FX liquidity management decision making will become increasingly automated as market participants collect larger, richer data pools, and as execution becomes even more electronic, says Totten of the future for liquidity management. “There are many examples of next steps that can be taken to extract greater gains from automation, such as helping liquidity consumers to select the best off-the-shelf algo from the alternatives offered by oneZero, by banks and by other LPs,” says Totten.

However, Totten adds that there is still a need for manual involvement. “We are still in a liquidity management environment where some manual oversight is required, partially for compliance reasons, but also because data sets may not be rich enough to inform performance in certain market conditions, such as trading of less liquid FX pairs or when a major shift in sentiment occurs.”



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Bridging the Divide: FX HedgePool Continues to Democratize the Market

FX HedgePool, known for its X•Match P2P swaps matching service, is setting a new industry standard with X•Bridge. In an interview with e-Forex, co-founders Jay Moore and Emin Tatosian describe how X•Bridge liberates liquidity in a true all-to-all market.

Jay Moore
Co-Founder/CEO

Townsend Smith
CFO

Jane Krenitsky
Head of Product
Management

Michael Buchsbaum
Head of Integration

Emin Tatosian
Co-Founder/CTO

“At FX HedgePool, we are committed to creating a more inclusive and efficient trading environment by democratizing access to liquidity.” – Jay Moore

Jay, can you give us an overview of FX HedgePool and its evolution since its inception?

Absolutely. FX HedgePool's mission from the beginning was to modernize institutional FX through bold innovation and cutting-edge technology. We started with a simple yet powerful idea: to make peer-to-peer a reality for the FX market, and we did that with X•Match, our swaps matching platform. Since then, we've leveraged our technology, vendor integrations, unique credit model, and growing community of buy- and sell-side clients to evolve our products. We began with offering a single product and now have a multi-service platform with the introduction of X•Bridge.

Our progress hasn't happened in a vacuum. Collaboration with clients has been an essential ingredient to our success. We've focused on working closely with industry leaders to solve real client problems.

What are your job responsibilities and the roles of senior executives within FX HedgePool?

As a senior executive, my role is dynamic. I oversee the strategic direction of FX HedgePool, drive the product roadmap, and maintain key client relationships. Our executive team is a diverse group of finance, technology, and trading experts. For example, my co-founder and our CTO, Emin Tatosian, brings a wealth of knowledge from capital markets and modern tech, offering a fresh perspective on product design and user experience and an incredibly disciplined approach to product

development. Townsend Smith, our CFO, has extensive experience in markets, operations, legal, compliance, and regulatory matters, allowing us to navigate the complexities of the FX industry. The mix of expertise across the broader team allows us to tackle industry challenges head-on and scale our mission effectively. Each member's unique strengths ensure our products are highly relevant and impactful.

What challenges in the traditional FX market structure does FX HedgePool aim to address?

There are many challenges facing the industry. The traditional FX market structure can be quite restrictive. For our primary target market, the institutional folks, funds are usually limited to trading with banks they have direct credit relationships with under ISDA agreements. This creates inefficiencies and limits market access. We wanted to change that. Our goal was to create a more inclusive and efficient

trading environment where liquidity isn't constrained by credit and broker restrictions. By leveraging our proprietary credit intermediation model and modern platform, we can democratize access to liquidity, helping market participants trade more freely and efficiently, thereby reducing costs and enhancing market transparency and fairness.

“The eagerness of our buy- and sell-side partners to collaborate and openly share ideas makes client engagement both refreshing and rewarding.”

– James Davison, Americas Distribution

Jay Moore
Co-Founder/CEO





How does X•Match work, and what makes it unique?

X•Match is our peer-to-peer matching platform for FX swaps. It allows naturally opposing institutional counterparties to match their swaps directly, avoiding market exposure where information leakage and uncertain spreads are common. What sets X•Match apart is its separation of liquidity from credit, making trading more efficient, discreet, and flexible without needing direct credit relationships with trading partners. By removing traditional barriers, X•Match enables access to a broader universe of liquidity, including peers, to help participants meet their best execution requirements and scale their growing liquidity requirements.



What led to the development of your new product, X•Bridge?

We asked clients what they needed. What a groundbreaking concept, right? The development of X•Bridge was driven by our collaboration with some of the world's largest asset managers. They challenged us to leverage our unique credit model to address other market inefficiencies. This collaboration inspired X•Bridge, which is designed to allow managers to source liquidity independent from credit to enable improved cross-account netting and access to new sources of pricing in a true all-to-all environment. We conducted extensive research and gathered client feedback to ensure X•Bridge met clients' specific needs. This client-centric approach has been key to its successful launch.

How does X•Bridge differ from traditional FX trading platforms?

X•Bridge breaks free from traditional market constraints of credit and broker restrictions, enabling a true all-to-all trading environment. This modern global superhighway supports liquidity from various sources, including banks, non-banks, and peers thanks to our proprietary credit model. It also leverages state-of-the-art technology for superior performance and reliability, ensuring clients can trade efficiently through familiar workflows. Its modern design and robust infrastructure make X•Bridge a game changer for the industry.

What are the specific benefits of X•Bridge for buy-side participants?

Buy-side participants enjoy numerous advantages with X•Bridge, such as:

- **Broad Liquidity Sources:** Access to diverse liquidity sources, starting with algos and fixing orders, without broker restrictions, enhancing execution quality and reducing costs.
- **Credit Intermediation:** Use existing bilateral credit lines for booking and settling trades, optimizing credit relationships and managing counterparty risk more effectively..
- **Maximize Internal Netting:** Defragment orders for consistent execution, reducing transaction costs and improving efficiency.
- **Seamless OMS Integration:** Utilize existing Order Management System (OMS) workflows, ensuring a smooth and efficient trading process. These benefits translate into tangible improvements in trading efficiency, cost savings, and overall market access.

How does X•Bridge benefit sell-side participants?

Sell-side participants also reap significant benefits with X•Bridge, including:

- **Modern Account Allocations Tool:** Receive account-level allocations for Voice and IB Chat trades at zero-brokerage, simplifying the allocation process and reducing costs.
- **Liquidity Distribution:** Bypass broker restrictions and distribute liquidity to a wide range of clients, enhancing market presence.
- **Algo Store:** Deploy algorithms to reach new real-money clients, cutting algo brokerage costs.
- **Lower Regulatory Capital:** Optimize counterparty mix, reducing regulatory capital requirements and improving financial performance. These features streamline operations, expand client bases, and enhance financial performance.

How does FX HedgePool ensure that its products address real client needs?

Our product development is heavily influenced by close collaboration with clients and other industry leaders. As one client put it, we focus on solving actual problems, not just innovating for innovation's sake. We engage with clients through feedback sessions, Innovation Pool™ meetings with trendsetters in the industry, and collaborative workshops to understand their evolving needs. We also directly engage with our clients regularly to provide updates, deliver demos, and seek live feedback for the product development process. This ongoing dialogue ensures our products are practical, relevant, and truly beneficial.

Emin, what impact has X•Bridge had on the FX market since its launch?

X•Bridge is our second category-defining service and the only true all-to-all liquidity platform; it's the clearest expression of our pursuit to democratize liquidity access. The initiative proves that meaningful innovation needn't take months or years but can be delivered in weeks with the right mix of talent, technology, and mindset. By going live with the first version in just four weeks and rapidly adding new capabilities, we have again demonstrated our appetite to take on tough market structure challenges.

FX HedgePool catalyzes positive change in the institutional FX industry and is actively reshaping the landscape using advanced technology and collaborative client relationships. The overwhelming interest in contributing to our various initiatives by thought leaders proves that we are bringing about change in the right way.

Can you share some success stories or feedback from clients using X•Bridge?

Our clients have been enormously supportive throughout our journey, and the X•Bridge chapter is no different. Category-defining services in the FX industry have a much better chance of success with the engagement of thought leaders, and we're blessed to have the backing of many.

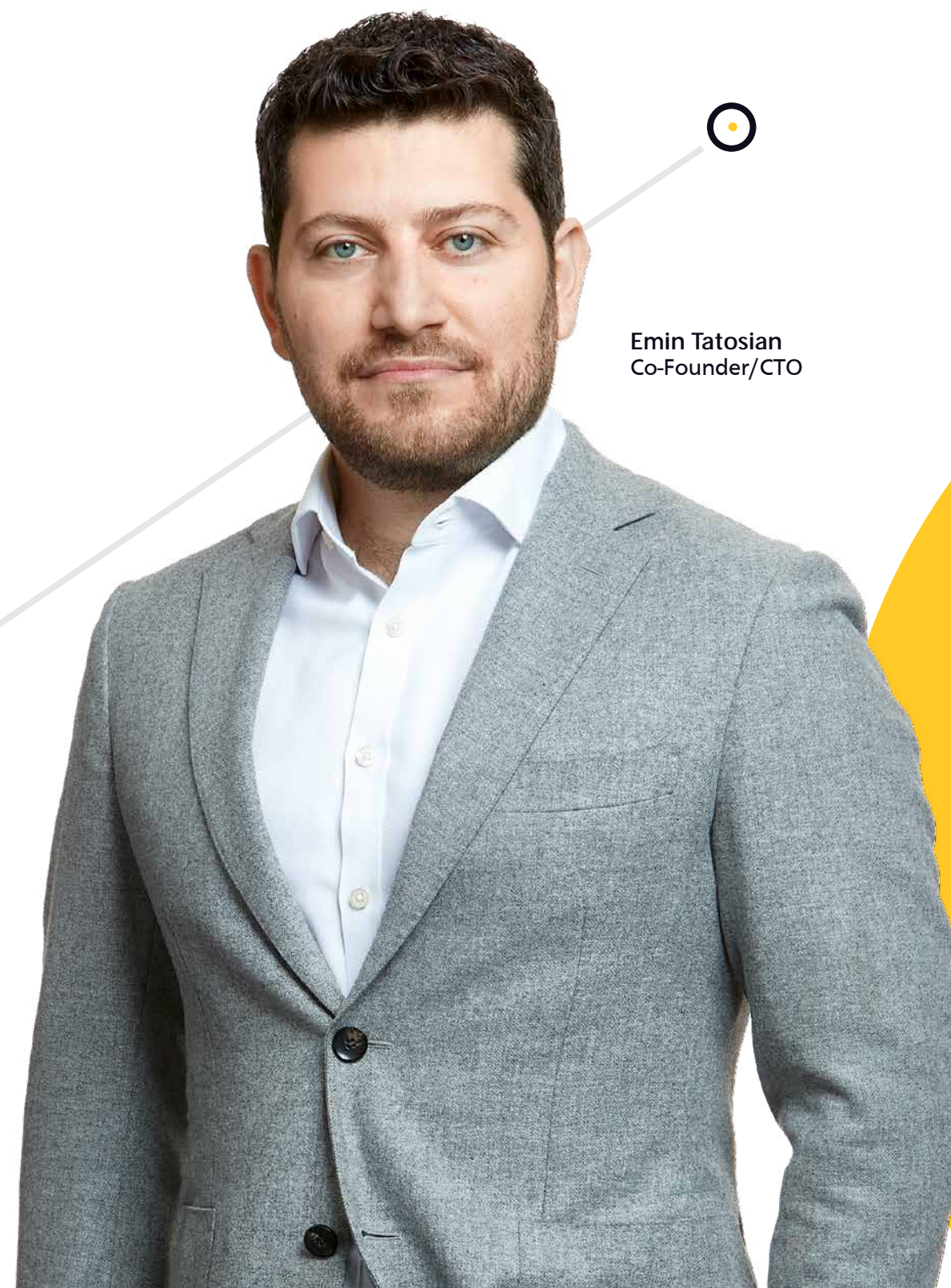
The buy- and sell-side working groups are an ongoing success story that reflects positively on participants who can see the step change brought about by X•Bridge. Another success story is the considerable cost savings delivered by X•Bridge for market participants. For instance, we can offer post-trade allocations of voice trades at no brokerage cost, thanks to our modern platform and low cost base. This is only the beginning of an ambitious roadmap, which will see the growth of a purpose-built algo store, intelligent credit intermediation, and much more.

What role has a modern technology practice played in the development and success of FX HedgePool's services?

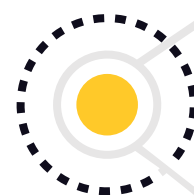
As a modern fintech, technology is at the heart of everything we do. Our continued investment in agile development tools and practices enables the team to rapidly deliver thoughtfully crafted features across the Platform, X•Match, and X•Bridge. With 24 meaningful product releases yearly, our agility is 10X that of incumbents. Our rapid and well-rehearsed product development process means we can swiftly address client needs during market change and deliver category-defining solutions quickly. Furthermore, our flexible integration layer allows us to continue weaving FX HedgePool into the fabric of e-FX, making our solutions easily accessible via leading OMS dashboards.

"We combine modern tools and agile techniques to deliver high-quality, innovative, and scalable solutions at an unmatched velocity." – Abhijit Rao. Principal Software Engineer.

"Our thoughtfully crafted solutions set new benchmarks for functionality, usability, and reliability. We will continue to deliver novel yet familiar solutions for the betterment of all market participants."
– Emin Tatosian



Emin Tatosian
Co-Founder/CTO



Jay, FX HedgePool has created X•Match, X•Bridge and the Innovation Pool with a relatively small team in only 5 years. What's the secret and how do you plan to expand in terms of product development and market expansion?

The secret? Adaptability, sleepless nights, and a sense of humor! The real secret is absolutely the team working on something they believe in. Every person on this team wears numerous hats and Emin and I are constantly in awe of them. We plan to enhance our existing products, expand the team and explore new opportunities to address market inefficiencies. Expanding our reach to new products and increasing our client base, while maintaining a white glove service are key objectives. Our commitment to innovation and client satisfaction will guide our future endeavors. We aim to stay at the forefront of the FX industry by integrating advanced technologies and expanding all-to-all trading capabilities. We're also exploring partnerships with industry leaders to enhance our product offerings and expand globally.

Also, it needs to be said that we believe that true innovation requires visionaries and thought leaders who are willing to take a chance and drive change. We are proud to acknowledge our groundbreaking community of participants in the Innovation Pool and our investors who have partnered with us on this journey so far. Their trust and collaboration have been instrumental in shaping the future of FX trading.

As we take on this exciting new chapter, we're all ears – and we invite everyone to join us in exploring the boundless opportunities that X•Bridge and X•Match offer together. The FX trading landscape is ever-evolving, and with the right tools and vision, we can shape it to be more efficient, inclusive, and dynamic than ever before.

FX•HEDGEPOOL



THE e-FOREX INTERVIEW

"Our highly customizable integration layer allows us to quickly and seamlessly integrate our solutions into existing client workflows"
– Michael Buchsbaum,
Head of Integration



"Our client-centric approach to innovation means that our products address real market needs and deliver tangible benefits."
– Jane Krenitsky,
Head of Product Management



"FX HedgePool's unique credit intermediation model forms the foundation for true all-to-all liquidity, enhancing efficiency and flexibility for all market participants."
– Townsend Smith, CFO

ALT21:

A market disruptor which is looking to redefine the FX hedging landscape and make it more accessible, simple and affordable

ALT21 is a fast growing fintech company that is focused on developing and servicing sophisticated multi-currency and FX hedging solutions tailored for businesses of all sizes. We caught up with its CEO, Pritesh Ruparel to learn more about the firm and its technology driven solutions.



Pritesh Ruparel

Pritesh, ALT21 is on a mission to democratise hedging for every business. How are you going about doing that?

If we take a step back, our mission is to help small and medium-sized businesses reduce the costs and risks of doing business internationally. For many small, medium, or fast-growing businesses, the cost of FX can be an afterthought when the priority is to sell their product. Managing your FX should be quick, simple, and cost-effective, but the reality is that, for most businesses, it is not.

Foreign exchange often involves hidden costs and charges, with British SMEs losing £2.8 billion and Irish SMEs losing over €430 million annually due to

excessive and hidden FX fees. Hedging is a whole different ball-game. ALT21 aims to eliminate these hidden costs, making currency exchange, and hedging straightforward, transparent and affordable for all businesses.

What range of products and services does ALT21 currently offer and who are you providing these for?

Our go-to-market strategy is three-pronged. As a dual regulated company we provide multi-currency accounts, currency exchange, and online hedging services directly to SMEs and fast-growing startups. Secondly, we work with partners who embed our service natively into their customer journeys.

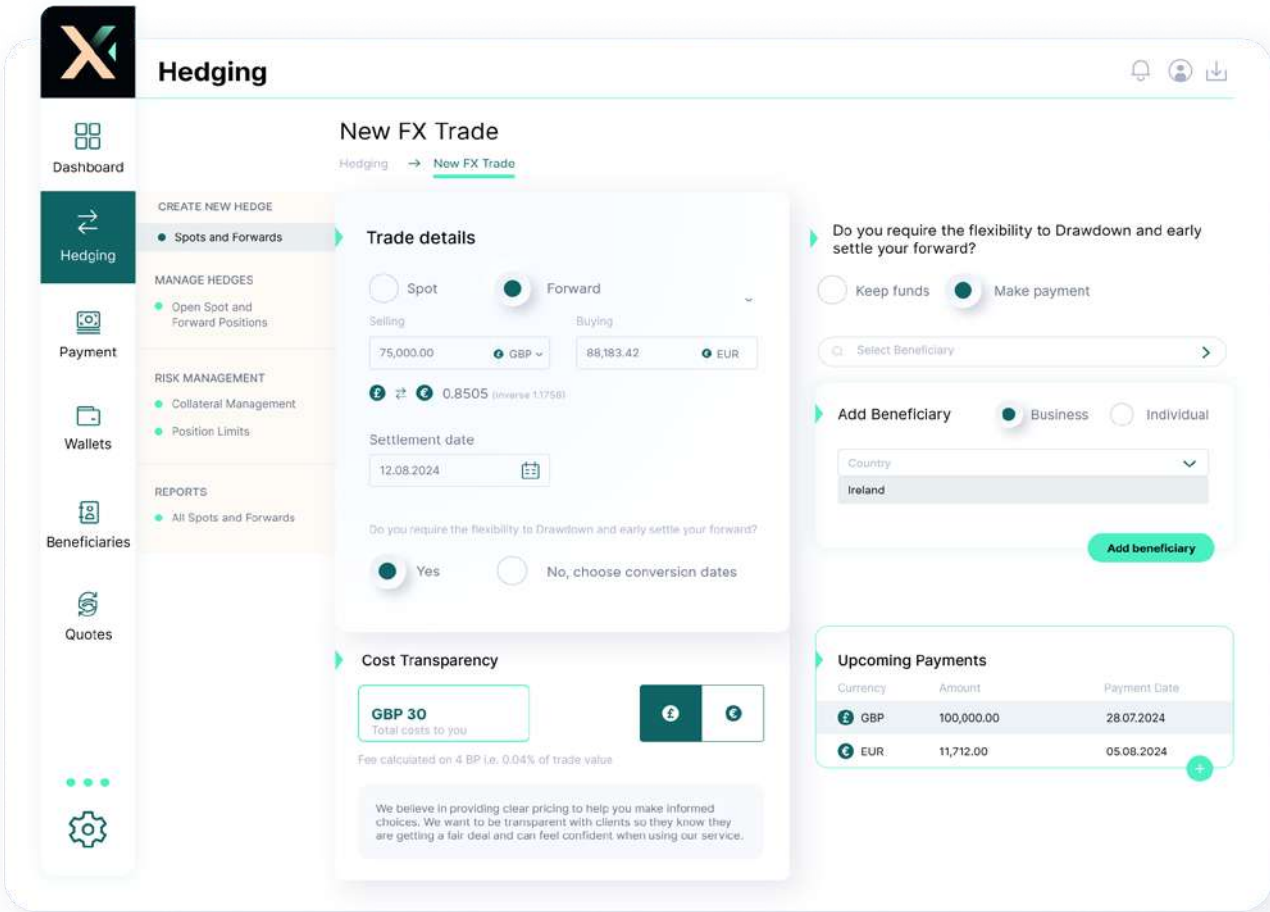
Not only do we work with many firms that leverage our technology but we also enable B2B marketplaces, accounting platforms, and other vertical fintech SaaS companies to enhance their clients' protection from exchange rate fluctuations and unlock new opportunities. Lastly, we have built a dedicated banking software division focused on providing cutting-edge white-labeled technology for banks to fully automate their entire FX hedging process and improve their end-to-end FX operations and SME banking services.

You have developed an all-in-one technology platform, X Hedge that automates the end-to-end currency exchange and FX hedging processes. Please tell us a little about the key features and functionality this offers and the currencies it supports.

Our flagship platform, X Hedge, is powered by our proprietary API infrastructure; we don't white-label other infrastructure because the existing technology stack is not cutting-edge enough for us. By building in-house, we have uniquely been able to expand our capabilities to bring a full range of hedging products together with multi-currency payment solutions to solve the problems for business owners and finance and treasury teams worldwide. The pricing is unbeatable, the service is first-class, and we're in this for the long run. We move so fast that one of the team members recently said we did more in 6 months than they did at their last role at a leading non-bank in the last four years.

What are the main benefits that the platform delivers?

We simplify access to services that were previously exclusive to large corporates, allowing startups and SMEs to access the right multi-currency and hedging



Our flagship platform is X Hedge

products cost-effectively and intuitively. This, in turn, enables these firms to make better, more informed decisions about protecting their businesses from the inherent risks of cross-border financial operations. Everything we do comes with transparent and ultra-low, if not the lowest, rates on the market, so that businesses can maximize their savings from foreign exchange.

This is a highly competitive industry. How do you manage to offer such competitive FX conversion rates? In what ways have you leveraged new technology and engineered your offerings to try and differentiate them from competitors?

Our team brings a unique combination of deep knowledge of the microstructure of the FX market, distinguished engineering capabilities, and an extensive network of connections in the market. This has

enabled us to build and offer one of the most disruptive FX solutions for businesses – by a long shot. We can sustainably offer competitive rates that are up to 10 times lower than the cheapest providers, following multiple years of investment in developing a technology platform that automates all key steps of the end-to-end currency exchange and FX hedging processes, with low human touch and straight-through processing, significantly reducing our operating costs.

It's been an exciting and very busy few months for ALT21. Please tell us a little about some of the highlights in terms of your ongoing product development and collaborative efforts to become the hedging solutions partner of choice.

We're busy on many fronts, accelerating our go-to-market at pace. Another notable highlight is our recent partnership with banking software

leader Temenos, which provides thousands of banks running on Temenos software with a plug-and-play, universal solution for bringing automated FX hedging solutions to market, cost-effectively and quickly. More similar partnerships will be announced soon.

Looking ahead what plans does ALT21 have for launching new solutions and trying to bridge the gaps that still exist between human interaction and trading apps for businesses?

Our foundation lies in innovation, so our key focus is continuing to build business-centric solutions that solve real problems for our customers and partners. We are developing product capabilities that weren't possible years ago, and deploying faster than ever. We are excited to deliver more innovation to a global customer base that is looking for a modern fintech solution.

What's all the fuss about?

Gathering insights about the extraordinary e-FX powerhouse of Singapore.

Singapore occupies a special place when speaking of international FX hubs. The city-state's rapid rise and continued importance have led to a wave of institutions, buy-side firms, regional banks, and other market stakeholders to set up their bases in the region. Vivek Shankar investigates.



Vivek Shankar

"Singapore's appeal for banks and global FX trading firms like Edgewater lies in its strong financial ecosystem, innovative trading technologies,

and strategic location," says Brian Andreyko, Chief Product Officer at Edgewater Markets. "The stable regulatory environment, led by the Monetary Authority of Singapore [MAS], offers transparency and trust, while supportive government policies and high compliance standards ensure security."

Aside from geopolitical stability and excellent global connectivity, Qian Ying Goh, Head of Institutional FX sales for StoneX Pro Singapore, points to another factor. "Singapore has a robust depth of buy-side clients such as family offices, hedge funds to sell-side from Tier 1 banks, regional banks, regional FCMs, major payment

providers, and commercials," she says. "Most of them are household names in APAC, ensuring huge foreign currencies demands on their local currencies against other major currencies."

Here's what the FX picture looks like in Singapore, the state of digitalisation, and how the electronic FX ecosystem is set to expand.

INTERNATIONAL INVESTOR APPETITE CONTINUES TO FUEL GROWTH

Stable regulation and a strategic location have powered Singapore's rise as a regional hub. The continued growth of Asian economies remains

a factor aiding demand for regional opportunities.

Soo Chin Tan, Head of Capital Markets FX Sales, APAC, LSEG, has kept a close eye on these developments. "The rapid economic expansion of Asia economies, particularly China, India, and in recent years, ASEAN, has led to global investors' increased appetites for regional opportunities," she says.

"As Asia's share of global GDP and trade increases, the demand for efficient FX execution and risk management grows, driving the need for more sophisticated e-FX platforms." This influx of investors has

contributed to deeper liquidity and tighter spreads Tan says.

In turn, as liquidity and price discovery become more transparent, regional and global traders benefit, creating a virtuous circle that positions Singapore as a prime location for eFX. Tan points to a few effects of this growth.

"The demand has led to a surge in trading volume in Asian currency pairs like the USDSGD, USDCNH, USDKRW, etc," she says. "In LSEG FX venues, we have witnessed the growth of regional currencies trading multiple-fold from regional banks and financial institutions over the past few years." As demand increases, stable

regulation from the Monetary Authority of Singapore has ensured the city-state's growth remains on track. Andreyko says this has played a significant role in Edgewater basing its activities out of Singapore.

"SG1 is our core data centre in the region [and] allows us to support technological innovation, leading to faster, more efficient trades for our clients," he says. "Increased trading volumes through the SG1 data centre results in tighter spreads and better regional pricing. Progressive regulatory frameworks support fintech development, fostering a conducive environment for digital FX."

Gathering insights about the extraordinary e-FX powerhouse of Singapore.

"Singapore has a robust depth of buy-side clients such as family offices, hedge funds to sell-side from Tier 1 banks, regional banks, regional FCMs, major payment providers, and commercials,"



Qian Ying Goh

Andreyko adds that the emerging markets in SE Asia are offering significant opportunities for 24-hour FX trading services. "These factors make the region a vibrant landscape for Edgewater to seamlessly deliver our technology to a growing client base that sees the value of integrating modern FX technology."

Singapore's, and Asia's, relatively young and digitally-savvy populations have ensured the rapid adoption of new and innovative services. Over time, this adoption has translated into a demand for more sophisticated financial products. Add regulation stability to the mix and Singapore's growth story becomes less surprising and seems almost inevitable in retrospect.

"Progressive regulations and government initiatives, such as the Monetary Authority of Singapore's support for fintech innovation, create a conducive environment for e-FX growth," Andreyko says. "Enhanced connectivity and integration with global financial networks have enabled seamless cross-border transactions."

As investor appetites increase

and regulatory authorities offer a supportive environment, how are leading eFX service providers offering more innovation?

THE SERVICE PROVIDER'S VIEW

Complexity is a common theme service providers stress when asked about execution patterns. StoneX's Goh says that market demand has shifted away from simplistic spot contracts. "At StoneX, we've observed FX trading in Singapore shifting towards more complex FX instruments such as forwards, swaps, and options as corporates and financial institutions look for more advanced instruments to hedge their currency exposure and occasionally take some exposure to the market," she says.

"We also see demand from clients trading in regional NDFs such as IDR, INR, PHP, THB, and KWR, all available through our trading platform," she adds. Goh notes that StoneX's ability to physically deliver up to 17 global currencies including AUD, JPY, SGD, and CNH in the APAC region has contributed significantly to the firm's growth.

LSEG's Tan says that service providers have been investing heavily in technology, infrastructure, and innovation to cater to more sophisticated electronic trading demands in the NDF and FX markets.

"For example, at LSEG, we are re-platforming our FX Venues to provide improved performance, client experience, and flexibility," she says.

"This includes a significant systems upgrade, and migrating our FX venues to a proven, common core technology. Spot and Forwards Matching will evolve with improved performance,

market data, and new order types."

Tan notes that LSEG's newly cleared NDF Matching venue in Singapore, directly linked to LCH ForexClear, is now live. With regards to algo trading, she says "...LPs have expanded their Algo offerings to include NDF currencies, together with enhanced execution toolset and more sophisticated trading algorithms."

Andreyko says that electronic trading in Singapore revolves primarily around major currency pairs (like USD, EUR, JPY, GBP, AUD) and regional currencies (like SGD, CNH, HKD). With most market participants demanding advanced analytics, AI-driven insights are a popular feature on Edgewater's platform.

AI also features in the number of novel solutions appearing for cross-border payments and other fintech use cases. "[Service] providers are utilising AI and machine learning for advanced trading platforms, blockchain for secure and efficient cross-border payments, and developing user-friendly digital banking apps with personalised tools," he says.

"Mobile trading services additionally offer real-time data and robust security for on-the-go portfolio management. These advancements enable more efficient, secure, and user-centric financial services, driving growth and adoption in Singapore and Southeast Asia."

Goh adds that the number of fintech providers offering novel solutions is increasing considerably. "We've seen a significant increase in solutions for digital assets and global payments in the past 24 months and this growth is expected to continue," she says.

AND WHAT'S FUELLING THIS GROWTH?

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LSEG FX

Gathering insights about the extraordinary e-FX powerhouse of Singapore.

"As Asia's share of global GDP and trade increases, the demand for efficient FX execution and risk management grows, driving the need for more sophisticated e-FX platforms."



Soo Chin Tan

"Accessibility to capital, reductions in technology costs, and an increasingly well-educated and experienced workforce," Goh says. "We've seen a significant correlation between the surge in growth of these companies and the demand for FX from the same sectors. It's easy to see the proliferation of cross-border payments firms at any fintech or financial services conference and StoneX is actively supporting many of these firms with our deliverable FX and currency hedging solutions."

Given Singapore's tech-forward stance, one would expect digital assets to receive considerable interest. Goh confirms this view. "According to recent reports, a significantly higher percentage of institutional investors in Hong Kong and Singapore have explored or have already invested in digital assets, and this number is notably higher than in some other leading global financial markets," she says. "This interest is no doubt influenced by a favourable regulatory environment and robust infrastructure that support digital asset activities."

Goh is quick to point out MAS' role in these developments. "The Monetary

Authority of Singapore has granted licences to several digital asset exchanges that serve institutional investors including banks, asset managers, and hedge funds."

Concurring with Goh's views, Andreyko says that digital asset development also extends to custody solutions. "Government and private sector initiatives promoting blockchain technology have enhanced transparency and efficiency in digital asset transactions," he says. "Furthermore, comprehensive market infrastructure, including liquidity providers and market makers, has been created to support the trading of digital assets."

Andreyko says these efforts have made Singapore a highly desirable destination for institutional investors and traders looking to engage with digital assets.

T+1, FINANCIAL TRANSFORMATION, AND FURTHER ELECTRONIFICATION

FX settlement's hottest topic right now is America's move to a T+1 cycle. When asked about its impact on Singapore and FX in general, Goh says she expects it to be negligible in terms of day-to-day operations.

"Obviously, the trading landscape has changed for some of our underlying hedge fund, asset management, banking, and brokerage clients, but the complexities added by T+1 haven't impacted us directly," she says. "Our FX business continues to grow at a rapid pace in Singapore and it's unclear if this is in any way connected to T+1. We suspect that this growth is due instead to the development of the

wider APAC market and the increasing penetration of StoneX across all asset classes in the region."

Andreyko feels T+1 will enhance FX trading operations by reducing counterparty risk and improving liquidity. "Faster settlement times increase efficiency and reduce capital tied up in trades," he says. "However, it will also require significant operational adjustments, including upgraded technology and processes to meet the shortened timeline. Overall, the move to T+1 is expected to promote greater market stability and competitiveness in Singapore's FX trading landscape."

In line with furthering stability and competitiveness, MAS recently announced the launch of the Financial Services Industry Transformation Map 2025 (ITM). The regulator aims to create 3-4,000 net jobs and achieve value-added growth of 4-5% every year. The program broadens and deepens the FX trading ecosystem, aiming to reinforce Singapore's position as a trading hub of choice for market stakeholders.

LSEG's Tan says the ITM "...also includes schemes to attract more liquidity takers to eFX venues and supports the adoption of emerging technologies, such as AI, machine learning and distributed ledger technology in the financial services sector." She believes these moves will likely result in more sophisticated analytics and risk management tools.

The promotion of sophisticated technology is a critical part of the program, says Edgewater's Andreyko. "Technological innovation is a key component, and that's what attracted Edgewater to the region, with the promotion of cutting-edge technologies such as AI and blockchain to enhance trading capabilities and infrastructure," he says.

EDGEWATER



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EDGEWATERMARKETS.COM



Institutional investors in Singapore are showing increasing interest in digital assets

"Additionally, the plan emphasises talent development, investing in skills and education to ensure a highly skilled workforce capable of supporting the growing FX ecosystem. Continued refinement of regulatory frameworks will maintain a secure and transparent trading environment, boosting investor confidence and participation."

Goh notes that the ITM is just the latest measure in a long line of

regulatory innovations that have helped Singapore stand out in the region. "Singapore can lean on attributes such as a stable political system, which is particularly appealing in today's political climate, a globally respected regulatory regime in MAS, and a positive attitude towards technology and digital adoption," she says.

"As an example, in 2020, the Singapore government launched a special legal structure that provides tax incentives for hedge funds, venture capital, and private equity firms to encourage them to establish a presence in Singapore," she continues. "As of the end of 2022, over 600 financial services companies had taken advantage of the program. This growth in the financial services ecosystem will almost certainly have a positive knock-on effect on FX trading."

SINGAPORE'S FUTURE IS BRIGHT

Singapore boasts several advantages



Brian Andreyko

"Singapore's appeal for banks and global FX trading firms like Edgewater lies in its strong financial ecosystem, innovative trading technologies, and strategic location."

that have propelled it to a leading spot in the FX world and this momentum is unlikely to slow down soon. "The Singapore government is expected to continue fostering a favourable business climate to attract financial services firms to the city," Goh says.

"The city boasts a highly educated workforce that has been bolstered by a significant influx of financial services workers and businesses towards the end of the Covid lockdown as Hong Kong's zero-Covid policies pushed them towards Singapore."

Andreyko concurs with this view. "The potential for further electronification of FX trading in Singapore is substantial, focusing on advanced algorithms, AI, blockchain, API integration, and mobile/cloud-based solutions. Continued regulatory support will drive innovation, enhancing efficiency, transparency, and accessibility, solidifying Singapore's position as a leading global FX trading hub."

"Efforts are being made to attract liquidity providers and expand FX product offerings, including NDFs and derivatives, to ensure deep and efficient markets," he continues. "The country is also prioritising the development of a highly skilled workforce and attracting global talent while fostering public-private partnerships and international collaborations to drive innovation and address industry challenges."

Aside from FX, initiatives within ESG, green finance, and the development of digital asset platforms are set to help Singapore retain its competitive edge and grow despite increasing regional and global competition.

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Technology continues to drive SGX FX upwards

Singapore's sophisticated investors demand access to innovative products and Singapore Exchange (SGX Group) has been at the forefront of meeting these needs. A longstanding commitment to delivering best-in-class solutions has ensured one of Asia's largest multi-asset exchange remains traders' preferred choice.

"Singapore has significantly advanced its financial and digital infrastructure with technological innovation and robust connectivity to provide the lowest latency times, domestically and internationally, between its peer FX trading hubs," says Vinay Trivedi, Chief Operating Officer, Sell-Side Solutions, SGX FX. "Round-the-clock trading availability, low trading costs, high transparency, and liquidity are some of the key features of Singapore's e-FX trading landscape."

Trivedi points out that MAS' efforts to bolster the FX environment with

progressive programmes have played a critical role. "The acceleration of cloud providers in recent years driven by favourable government policies has also benefited Singapore's digital infrastructure," he says. "Singapore is now home to more than 70 data centres, with the government recently announcing a roadmap to improve data centre energy efficiency to unlock greater capacity."

These efforts and technological innovation have led to Singapore positioning itself as a trusted and neutral jurisdiction, and the preeminent location where price discovery and matching takes place. KC Lam, Global Head of FX and Rates, SGX Group, says that investors view SGX FX as a venue for price discovery. "As SGX FX futures trade close to 24 hours, the interaction between listed FX and OTC FX will drive increased FX trading activity as a whole and not just in the Asian time zone," he says.

"Besides using SGX FX Futures (particularly for CNH, INR, and KRW) as a pricing source," he continues, "OTC FX participants are finding it easier to offload risks accumulated in the OTC market by trading SGX FX futures as it has minimal market impact. In such market conditions, institutional investors turn to SGX FX as deep liquidity, ease of price discovery and transparency are critical."

Recent macroeconomic events have created volatility in Asian currencies

and prompted heightened hedging activities across SGX FX's currency pairs including CNH, JPY, INR, and KRW.

"In May 2024, our FX futures trading volume was up by about 50% to US\$312.4 billion in notional terms, driven by record trading activity in our SGX USD/CNH futures which saw open interest hitting US\$20.3 billion – our highest ever," Lam says. "Our SGX INR/USD futures and SGX KRW/USD futures also recorded the largest single-day open interest at US\$7.0 billion and US\$1.1 billion respectively."

Lam notes that activity and liquidity from US and European market participants are rising, with over 40% of SGX FX futures traded outside Asia's trading hours. He also says SGX FX has taken steps to help customers manage price risks in CNH FX futures and OTC spot.

"We recently adjusted the official reference rate and timing of the Final Settlement Price (FSP) for our CNH FX futures contracts," he says. "Our customers who are trading spot or options in USD/CNH, for example, can now establish a hedge via our SGX USD/CNH FX futures and options seamlessly and efficiently. These latest changes were driven by feedback from our customers."

Trivedi says Asia FX NDFs have benefitted from Singapore's concerted push to build out the FX ecosystem. SGX FX – which offers one of the largest multi-dealer platforms for NDFs alongside its ECN SGX CurrencyNode hosted in SG1 – provides buy-side and sell-side market participants with

deepest streaming liquidity in the NDF market. In addition, Trivedi says the infrastructure needed for eFX has an impact outside traditional capital markets – notably in blockchain and DLT solutions. SGX FX has since entered the digital asset space. "[Our] solution offers the ability to price, trade, and distribute any cash or tradable tokenised digital assets," he says. "This solves current execution challenges in digital assets trading by introducing trusted and proven TradFi best execution. By bringing our TradFi know-how into digital asset trading, we hope to contribute to Singapore's rising influence as a global digital asset hub."

When asked how much more potential electronification in FX trading in Singapore has, Trivedi is bullish. "Singapore has significant potential for further electronification. We expect the development and expansion of electronic communication networks and multi-dealer platforms to continue in Singapore, providing more liquidity, tighter spreads, and

"As SGX FX futures trade close to 24 hours, the interaction between listed FX and OTC FX will drive increased FX trading activity as a whole and not just in the Asian time zone,"

improved execution quality for market participants."

"What holds boundless opportunities is AI," he says. "SGX FX's AI tool gathers FX and digital assets price and trade data before automatically generating actionable insights to a stakeholder for better-informed decision-making."

Evidence of SGX FX's commitment to technological innovation was its recent performance at the 2024 WatersTechnology Asia Awards. It clinched an award for Best AI-Based Solution, recognizing its ability to parse large volumes of market data and offer traders actionable signals and insights.

"At the moment, we are only scratching the surface of AI," Trivedi continues. "There is a lot of data in



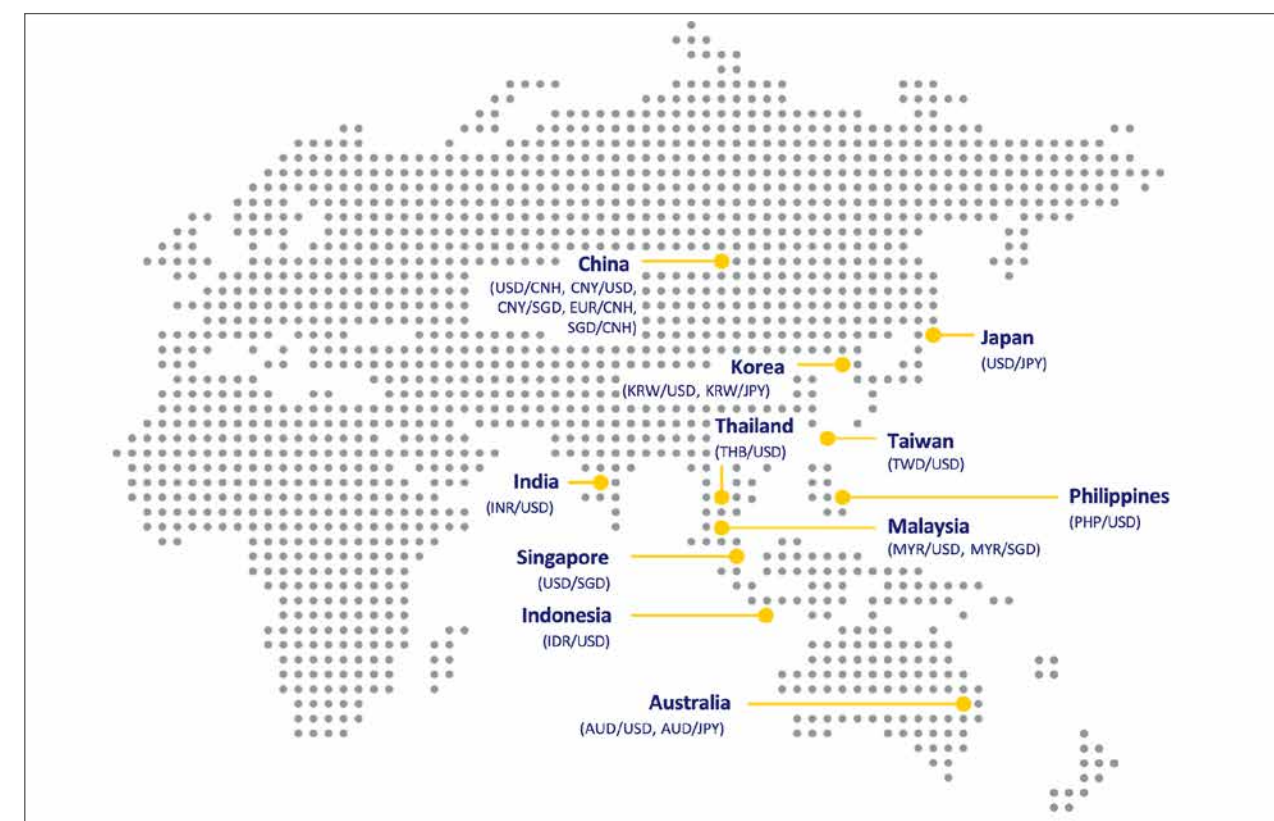
FX that is not exchange-traded, not centralised, and unstructured. How can we mine and monetise this data?"

If SGX's track record is anything to go by, we will undoubtedly see novel solutions emerging over the next few years, contributing to Singapore's attractiveness as an FX hub.



Vinay Trivedi

"Round-the-clock trading availability, low trading costs, high transparency, and liquidity are some of the key features of Singapore's e-FX trading landscape."



Located in Singapore, Asia's largest FX trading centre, Singapore Exchange (SGX) offers a comprehensive suite of FX futures and options contracts across major Asian currencies

SOURCE: SGX

Gathering insights about the extraordinary e-FX powerhouse of Singapore.

Regulatory vision continues to drive Singapore's advantages

Singapore has several factors in its favour that have turned it into a global FX powerhouse. Stable regulation and a forward-thinking posture are perhaps two of the most important variables that have propelled Singapore's rise, aside from its favourable geographic location and proximity to growing economies.

"In recent years, the position of Singapore's FX industry has been further bolstered by the development of e-trading infrastructure by key global players," a MAS spokesperson says. "Some trends and recent developments include the deepening of e-FX product scope and trading capabilities by new entrants into SG1, the continued growth of asset management AUM that grew by 42.8% from S\$3.4 trillion in 2018 to S\$4.9 trillion in 2022, and [Singapore functioning as the] home to a range of market participants including non-bank financial institutions, such as 4,000 regional treasury centres."

MAS launched the Foreign Exchange E-Trading Ecosystem ("FXET") initiative in 2018, recognizing the increasing pace of electronification in FX. These initiatives have led 18 of the top 20 global liquidity providers to set up pricing and

matching engines in Singapore.

"The latest phase of the FXET initiative was launched in August 2023 to support a wider group of liquidity takers to catalyse the growth of e-FX demand out of Singapore," says MAS' spokesperson. "Additionally, the growing presence of e-FX infrastructure in Singapore has been a key contributing factor to the strong growth of Singapore's FX volumes." The spokesperson says Singapore's eFX space is set to grow, spurred by "broad-based growth across Asian Emerging market (EM) currencies."

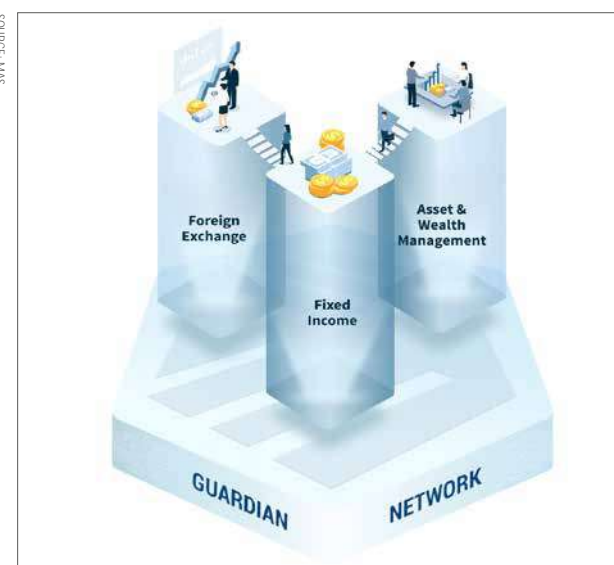
"In recent years in Singapore, we have also seen e-trading platforms and global banks adding Asian EM FX products, such as non-deliverable forwards (NDF) and CNH spot FX, to their e-trading offerings," the spokesperson says.

Singapore has always adopted a tech-forward approach and MAS' efforts to pave the way for greater digital asset adoption is no surprise. Project Guardian, a collaboration between MAS and 24 financial institutions, aims to explore the potential of asset tokenisation in Fixed Income, FX, and Asset & Wealth Management.

In an example of a successful pilot implementation, Bank of New York Mellon and OCBC trialed a cross-border FX solution to enable secure, interoperable payment solutions across diverse networks. Additionally, MAS' spokesperson says, "Ant International is developing a financial solution to improve how global funds are managed and utilised, allowing for instant, cross-currency transactions and settlements, and facilitating continuous FX trading capabilities."

Has the project yielded any interesting results so far? MAS' spokesperson highlights a few. "The pilots conducted under Project Guardian have shown promise," they say. "Tokenised FX transactions can be settled faster due to the automation through smart contracts, the cost of establishing and maintaining multiple bilateral counterparty trading lines required in today's over-the-counter markets has reduced, tokenisation is allowing seamless money movement that is

SOURCE: MAS



Project Guardian aims to explore the potential of asset tokenisation in Fixed Income, FX, and Asset & Wealth Management

not restricted by time zones or fragmented across multiple trading venues, and the cost of maintaining numerous bilateral correspondent relationships has lowered."

FINANCIAL SERVICES INDUSTRY TRANSFORMATION MAP 2025

In terms of initiatives, MAS' Financial Services Industry Transformation Map ("ITM") 2025 looms large. The initiative aims to position Singapore as an international financial centre that connects global markets and supports Asia's development. "Our strategies under ITM 2025 include deepening capabilities across key asset classes to enhance Singapore's value proposition as a financial centre," the spokesperson says. "This will create multiplier effects and benefits across all asset classes."

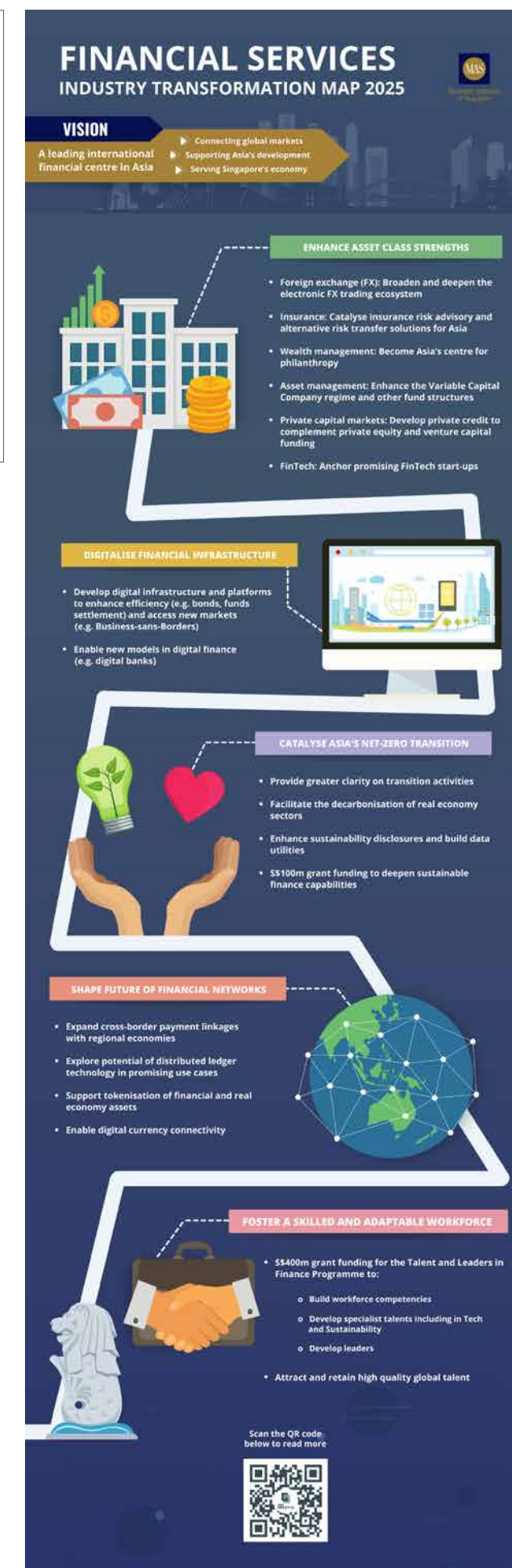
"As more regional financial services get intermediated through Singapore, this will continue to drive demand for FX products and solutions for risk management, and thereby the growth of our FX industry," they say.

Ultimately, these initiatives are set to cement Singapore's position as a key player in the financial world. "Singapore will play an important role in capital intermediation for the region, offering financing, investment, and risk transfer solutions for the real economy, including infrastructure and sustainability – where growth will come from investments for development as well as the transition to net zero," MAS' spokesperson says. "At the same time, Singapore will build up digital asset capabilities as new technologies reshape the future of finance."

With such regulatory vision, Singapore is unlikely to forfeit its advantage in the FX world anytime soon.

REGIONAL E-FX PERSPECTIVE

SOURCE: MAS



Spark Systems

one of Singapore's fastest growing companies that's helping to redefine the user experience in e-FX trading and execution

Spark Systems are builders of next generation, fast, smart and efficient trading platforms. The firm aims to bridge the technological gaps that exist between the best Tier 1 bank Market Makers and other FX market participants. We asked Jason Wang, Wong Joo Seng and Ye Ting Song, Co-Founders of the company to tell us a little more about how it's going about doing that.



Ye Ting Song (CTO), Wong Joo Seng (CEO), Jason Wang (COO)

What does Spark Systems' core product offerings include?

We started off as an aggregator, catering to buy-side clients who consume liquidity from Banks and

ECNs. As we engage our clients, a handful of bank clients have asked us to solve for some specific use cases, which eventually developed into our Bank Sellside product. This product enables banks to market



Spark Systems' unique proprietary technology and robust architecture help to deliver a complete e-FX solution

make and stream FX prices and liquidity to their clients via various channels.

What types of clients are you providing these products and services for?

Most of our clients are large hedge funds and regional banks.

In what ways are you leveraging proprietary technology to deliver much more complete and powerful e-FX solutions than many of your competitors?

Coupled with our knowledge and experience of FX, our technology team was able to use the latest cutting edge technology to solve the various use-cases that were asked by our clients. Nothing is perfect, but through many iterations of sitting down with our clients and showing prototypes, we were able to deliver to our client's satisfaction.

Spark's e-FX platform is built entirely in-house. What are the advantages of that?

We are in absolute control over our timelines and also able to innovate. If we were to outsource

the development, it would just be a perfectly tailored solution without some of the extra delightful features and innovations.

How customisable and flexible are your solutions to meet the unique workflows of clients?

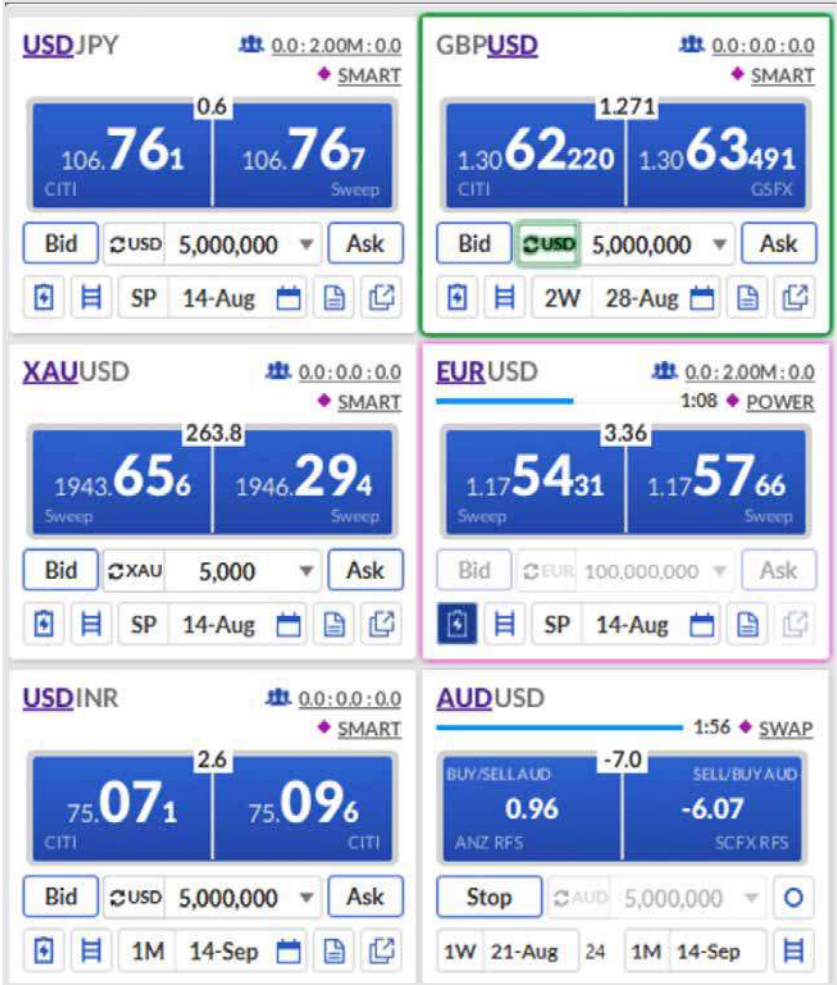
Asia is very diverse and we need to architect our platform to be flexible and customisable, and yet scalable, to be able to cater for their different needs. A client in Singapore would be different from Malaysia, Taiwan or even Korea. And yet, our modular architecture has enabled us to deliver for our clients. We are also able to provide a completely SaaS solution, or a on-premise solution, based on the client's needs.

Spark Systems was the first FinTech on the ESGpedia registry platform. Why is that important and what benefits does it provide?

While ESG reporting is not currently mandatory for non-listed entities, Spark Systems aims to proactively establish ESG practices in anticipation of future regulatory changes for SMEs and startups. By doing so, we seek to lead by example and set a proactive standard in the industry. As a first step, we have voluntarily started recording our carbon data and sharing it on ESGpedia to drive data driven actionable insights.

Last year Spark Systems was listed as one of Singapore's fastest growing companies. What makes the City state such a good place to be running a disruptive fintech firm like yours?

Singapore have a very supportive central bank, the MAS, who is able to help build out a bustling ecosystem for



The Spark e-FX platform is a cutting edge system

Fintechs such as Spark. Annually, the MAS organises the Singapore Fintech Festival, which is now a global flagship event for Fintechs to showcase to the world. The event is the largest of its kind globally and is well recognised by global leaders and players. With a thriving eco-system, we are able to tap on talent and also build up a strong client base.

What plans do you have for expanding your geographical footprint around the world?

We started in Asia, to fill some of the solution gaps for clients in Asia. However, FX is a global product and we do have ambitions to expand to London and New York in the next 12 – 18 months. Watch this space!



EMS platforms: Functionally rich systems delivering ever more powerful solutions for the FX buy-side desk

Productivity and efficiency are more than buzzwords to buy-side firms. They are operational pillars as the pressure to reduce costs and improve execution has increased. EMS platforms play a critical role in helping firms hit these goals as Vivek Shankar discovers.

What makes a good EMS platform? A few years ago, The Finance Hive surveyed traders at firms managing more than \$10 billion of assets, and highlighted the depth of liquidity, OMS integration, and the ability to measure execution impact as important criteria in an EMS platform.

These needs have not changed much, but have evolved in complexity due to technological changes. "The execution part has always been important for FX buy-side firms, but with the evolution of the technology around data and automation, the need for a system that combines both of these components into one unique platform has become crucial for best execution," says Sebastian Hofmann-Werther, Chief Revenue Officer FX & Digital Assets, 360T.

Uday Chebrolu, SVP, Head of FX & Digital Assets at FlexTrade Systems, points to data handling as a critical

component. "Handling vast data available to FX Traders means an EMS is now crucial for buy-side firms," he says. "You need the connectivity to pull in streaming and RFS pricing to engage and handle large volumes of trades. Across pre-trade, intra-trade, and post-trade, you need to be able to manage the whole life cycle. With an appropriate EMS system solution and the automation it can bring, you can free up the traders to focus on high-touch order flow."

Here's a look at the buy-side's evolving EMS platform needs and how service providers are reacting to them.

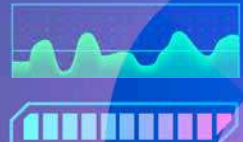
CLIENT DEMANDS AND PLATFORM ATTRIBUTES

"Trading desks are constantly tasked to do more with less, and leveraging technology is the smartest way for them to do so," says John Marchese VP, Head of FX EMS Sales, Americas

at FactSet. "For example, many firms today do not have dedicated FX trading desks, and their traders must be multi-asset specialists."

He explains that these traders need holistic support to hit those efficiency goals and leveraging multi-asset solutions is key. "Best-of-breed multi-asset solutions should strongly support each asset class and have a dedicated team of industry experts that all work in tandem with each other to ensure a scalable and cutting-edge user experience."

Hofmann-Werther lists two qualities when asked which functionality is critical for modern EMS platforms. "Flexibility and interoperability are essential. The ability to adapt to client workflows while interacting with external technologies in the market, like analytics (Trade Cost Analysis) or Market Data providers, is something



“The ability to adapt to client workflows while interacting with external technologies in the market is something every EMS platform needs to have.”



Sebastian Hofmann-Werther

every EMS platform needs to have if they want to keep up with today's standards and expectations.”

He points to 360T's data integration capabilities and easy access to liquidity as examples. “Our automation features, workflow customisation, and flexibility help to increase productivity, reduce operational risk, and streamline the entire trade lifecycle,” he notes.

Chebrolu explains that buy-side needs can vary depending on the type of firm. “The end users of an EMS can be broadly segmented into two segments,” he says. “Hedge funds,

which are prime broker-based, and asset managers, who trade bilaterally. Each segment has slightly different needs.”

“Asset managers are more workflow-oriented but still need the EMS to deliver high levels of STP and best execution,” Chevrolu continues. “On the hedge fund side, they have a prime broker, meaning they have more flexibility regarding how they trade.”

This means an EMS platform has to have baseline functionality, such as handling new requests for streams, executable streaming prices, broker algos, and manual trades. Chevrolu points to data analysis as a critical feature, given the mountains of data FX generates these days.

Beyond this, client requests determine ideal functionality. Given the need to do more with less, EMS platforms have matured. “Client relationships to trading assets have evolved over the years, which have naturally changed their demands and shaped EMS platforms,” Hofmann-Werther says. “In terms of assets, EMS platforms

had to follow the evolution of trading desks which increasingly diversified their spectrum recently.”

Chebrolu says cost is a primary driver of this shift. “You'll have multiple costs if you're dealing with multiple platforms,” he says. “Trading tech teams need to be aware of integration and infrastructure costs. People must spend time and effort integrating with two vendors or different systems.”

Given these needs, consolidating trading to a single solution brings significant savings. “From the trader's perspective, with all assets handled from a single, consolidated EMS, cross-asset workflows are possible, which weren't possible before,” Chevrolu says.

“Let's say a trader is undertaking an equity or fixed-income trade with an FX component. That information about pre-executing the fixed-income trade can be fed into the FX portion. The FX trader will know they are getting a large “buy or a sell” of a certain currency pair, which can help guide the execution of what they have on their blotter.”

He points out that despite a preference for multi-asset platforms, clients don't necessarily trade every asset class.

“We see a broad spectrum of client demands,” Chevrolu says. “They could use us for futures and FX, equities and fixed income, or fixed income and FX. Sometimes, it's all asset classes — equities futures, options, fixed income, FX, and digital assets.”

Since the need for efficiency looms large for buy-side trading desks, automation in the trade lifecycle is a sought-after feature. FactSet's Marchese believes this has been a game-changer for firms. “Having the ability to completely, or partially,

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EMS PLATFORMS ARE FACING INCREASINGLY COMPLEX BUY-SIDE WORKFLOWS



"Handling vast data available to FX Traders means an EMS is now crucial for buy-side firms,"



Uday Chebrolu

automate the execution of lower value trades, auto-route benchmark fixing deals or leverage algo-wheels to eliminate trader bias," he says. "All this means fewer clicks for the traders and more time to focus on complex trading scenarios that require their focus and attention."

Marchese says that automation is far from an all-or-nothing proposition. "Portware's clients avail the entire spectrum of automation from very simple to extremely advanced," he says. "Basic things like auto-netting trades into blocks, or sending out multiple pairs at once and executing

them in a single click, to more complex bespoke rules for full no-touch executions tied to curated liquidity pools and market data events."

Despite automation's benefits, Chebrolu points out that manual workflows still have a place.

"There are situations where, for example, a world event happens, and the market widens; sometimes, you must pick up the phone, leverage your relationships, and get the trade done," he says. "The scope to have that option is vital."

Despite this, he says that FlexTrade's customers have been automating all of their flow across asset classes, including FX. "From a FlexTrade point of view and the EMS platform, we can deliver 100% automation, and we have clients who are already doing so," Chebrolu says.

"There will always be manual workflows, and you would want to have that manual option to use in

case of emergencies or where it makes sense to trade manually."

ADDRESSING WORKFLOW COMPLEXITY

EMS platforms are facing increasingly complex buy-side workflows. For instance, large volumes of FX trades executed on behalf of a wide array of funds, each of which might have different requirements, can pose significant complexity.

Accommodating these complexities is a top priority for major EMS solutions providers. Marchese offers an example. "Another important workflow our clients had asked us to solve, is slicing larger FX orders with multiple allocations and ensuring that the post-trade aspect is correctly accounted for," he says. "It's a process that the market has struggled for years to solve."

In this workflow, there could be hundreds of trade allocations needing correct pro-rata execution amounts booked back to the client's OMS in real-time. "Fortunately, our team developed a solution for this years ago, and have been advancing it to be more cutting edge, and refined ever since," Marchese says. "This truly allows our clients to have the best and most flexible trading experience out there, with the comfort of knowing all of the back-end plumbing is being handled properly."

Hofmann-Werther offers another example. "One of the major challenges when it comes to managing different fund requirements is optimising for bank intersections," he says. "At 360T, we have developed a tool to optimise these scenarios by automatically enhancing the bank basket using predefined parameters so that funds are not impacted by varying requirements."

EVALUATING THE SUITABILITY OF AN EMS PLATFORM CAN BE CHALLENGING



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EMS platforms: Functionally rich systems delivering ever more powerful solutions for the FX buy-side desk

"Trading desks are constantly tasked to do more with less, and leveraging technology is the smartest way for them to do so,"



John Marchese

Chebrolu says workflow and allocation complexity create data handling challenges. "It's difficult for the trader to be without a system that takes all the variables into account and shows a streamlined, simple view where they can just think about the execution and not worry about 'this account has a certain restriction, or for that account, we can only trade with this specific broker.'"

The system should automatically do that for the trader," he says. Chebrolu says EMS providers must offer technology as a solution to handle these complexities, believing that complexity will never cease. "The buy-side is trying to invest in areas that will result in more order flow and is looking into how the market evolves to create, and this will create new workflows," he says.

When asked how 360T is dealing with the challenges emerging from workflow complexity, Hofmann-Werther says the company's focus is in four key areas — automation, data, workflow solutions, and innovation.

"The 360T EMS supports full automation across the entire trade lifecycle, including low touch or full

no-touch execution where trades are sent automatically from the OMS or TMS to the EMS, netted and executed based on a set of predefined parameters and using high-quality data as a benchmark and then seamlessly transmitted back to the OMS or TMS without any human intervention," he says.

"Having high-quality data integrated into the platform which can be used as one of the parameters to ensure trades are never executing more than a predetermined distance from the market midpoint is also a major differentiator," he continues. "The key here is the ability to support auto-execution across multiple products, not just Spot FX. That's why we have also integrated our in-house differentiator, the award-winning Swaps Data Feed (SDF) into the 360T EMS. The SDF is developed jointly by 360T and Digitec."

Hofmann-Werther highlights 360T's split risk functionality, "which enables users to automatically compete the forward points before directing their Fixing Orders to the successful market maker."

Chebrolu points out that while some platforms are great at aiding manual trading and others excel at automation, few excel at both. "It's certainly not easy, as it's not just your core technology platform and functionality that you need to stay abreast of — it's also the connectivity to multiple counterparties and the ensuing integrations you need to maintain to them," he says.

"Conversely, these counterparties and market entities need tech spending to integrate with your solution."

"While it can be time-consuming," he continues, "we have spent time and effort over the last several years to achieve good coverage across both electronic and manual trading capabilities."

Ultimately though, Chebrolu says, the ability to offer data analytics for use within the application is a major differentiator. "We can expect it to consolidate within a few years, as only so many data points are useful to a trader," he says.

WHAT FACTORS TO CONSIDER IN AN EMS PLATFORM

As data quality becomes more important than ever in the trade workflow, evaluating the suitability of a platform has become challenging. Hofmann-Werther stresses the need for a commitment to innovation in a solutions partner.

"Flexibility and adaptability are crucial, as the technology must be able to evolve with changing market conditions and firm requirements," he says. "It's in the clients' best interest to choose an FX technology partner who is committed to constant innovation via regular new release cycles, one that could help them keep up with the changes and deliver quantifiable benefits at the same time."

"Additionally, the partner should provide robust liquidity access and facilitate easy onboarding, ensuring that the firm can efficiently tap into various liquidity pools and bring new assets or strategies online without significant hurdles," he continues.

"Lastly, interoperability and integration are essential to ensure that the technology seamlessly integrates with the firm's existing systems and other market infrastructure, promoting smooth and efficient operations."

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Marchese echoes the point about flexibility, saying this is the key to helping firms adapt to changing needs. "Finding a dedicated technology partner is crucial to giving clients what they need as they scale," he says. "Their needs change and become more complex over time, and they need a partner who is flexible and willing to work with them to achieve their goals. Giving clients a boilerplate platform just doesn't cut it anymore."

Chebrolu suggests a step-by-step approach, starting with examining a service provider's functional capability. "Are you looking for an individual asset class or multi-asset solution?" he says. "You need to ask and understand how any new partner and their system can handle your trading teams' current and future requirements."

"Secondly," he continues, "what is the firm's history, track record, and

client list? Choosing to partner with a firm that their peers leverage and knowing it's a proven, functionally rich solution successfully delivered to their requirements versus a new vendor that might possess unknowns can help reduce perceived risk."

"It makes the outcomes of selecting an established vendor over a new vendor more predictable, which, with understandably risk-averse clients, is optimal," he says.

Chebrolu lists further factors such as ownership, infrastructure, or a potential partner's commercial drivers, "...which could affect their ability to set their product roadmap to deliver innovation."

"For instance," he says, "is the potential technology partner investing in functional areas of the EMS, which, although they might not be immediately profitable for their bottom line, are designed to benefit the client and

broader market over the longer term?"

LOOKING AHEAD

"A client recently told me that the holy grail in FX trading is to incorporate automated data-driven analytics into the front-end of the platform so they can inform the next trading decision regardless if it's automated or manual," Marchese says.

As technology and innovation within EMS platforms continue, we are moving closer towards this vision. "We've already started to close the feedback loop by providing curated liquidity pools based on the client's historical trading activity to help decision-making and integrating real-time market data into these pre-trade measurement tools to help facilitate the next level of automated executions," Marchese notes.

While innovation is great, Hofmann-Werther notes that developing products in line with regulatory requirements is critical to future-proof them. But communication isn't limited just to them.

"The most important steps leading EMS providers like 360T are taking regarding the future can be summed up in one word: communication," he says. "360T has a constant stream of communication with buy-side clients to understand and stay on top of the challenges they face. Maintaining communication with partners in the market is another critical step necessary to ensure 360T EMS clients have the necessary tools at their disposal to leverage fully integrated methods, monitor and analyse their trading activity and optimise their FX trading operations."

While trade workflow complexity will continuously increase, solutions providers have their fingers on their clients' pulse, ready to offer innovative solutions.



Finding the right dedicated technology partner who is flexible and adaptable to a clients specific needs is essential

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Solving the problems of an outdated global FX Payments model

The FX payments industry needs a new approach to partnership to solve longstanding inefficiencies and address demand for modern settlement rails. We spoke to Mike Robertson, Co-founder and CEO, and Olann Kerrison, Chief Commercial Officer of the firm, to learn more about the issues involved in the FX payments space and how the company has disrupted the status quo with a new platform that delivers quicker connectivity, greater transparency and reduced cost.



Mike Robertson

Mike, what are the main reasons EM payments are so costly and complex to undertake?

A lack of transparency on pricing and services, fragmentation due to connectivity difficulties and limited liquidity are the key reasons. Payments via EM currency corridors typically require on-shore FX conversion, which makes the payment process more complicated than same-currency payments. Limited liquidity clearly adds to the difficulty – especially for large payments – and many EM markets have bespoke requirements related to capital controls that require specialist knowledge. All payments are messy...it's just amplified in EM.

Why is lack of transparency and difficulty in complying with regulatory obligations also a serious problem with the way EM payments are made?

The combined impact can increase costs significantly by reducing straight-through processing rates in corridors where the lack of transparency already makes price discovery and benchmarking difficult. Increasing customer expectations on speed of settlement are putting additional pressure on delivery timeframes to emerging markets, where recent developments like real-time payment systems require increased automated or STP processing.

How have large banks traditionally managed cross-currency payments and what are the inefficiencies associated with the outsourced settlement arrangements they have been putting in place for many years?

Banks have typically managed currencies in three segments; for more liquid currencies they trade in line with the normal market conventions and settle via their own branch network, or, where they have the volume but no branch, they open a nostro with a corresponding bank, manually fund the account and the correspondent settles the payment. Alternatively - and this segment accounts for between 50 and 100 currencies depending on the bank, they outsource the FX trade and settlement service to a payment

partner. All three segments have pros and cons, but the outsourced segment is the most problematic. In this segment margins are simply too high, due to a lack of price competition or transparency. Regulatory reporting is a growing problem that many banks are in denial over and innovation – due to the huge challenge of integrating with the partners banks need to optimize their payment offerings – is almost nonexistent.

Are there any other sources of friction in current FX payments processes that you have identified that also need fixing?

Many of the challenges come down to connectivity. Banks are great at many things, but innovation is probably not one of them. They really need fintech partners to help build out the innovation in the ecosystem, but the costs and complexity associated with building direct connections to multiple providers is significant. The simple act of connecting more efficiently – via the AbbeyCross platform for example – can address many issues like a broader market view of pricing, or increased choice of settlement rails. We believe the need for a better partnering and approach to connectivity is crucial.

You launched AbbeyCross to offer an enhanced user experience with greater provider choice, enhanced price transparency and a more efficient settlement experience. How difficult has that undertaking proved to be?

Working with banks isn't difficult if you understand how to do it, and with our experience, we do. But it is slow and process-heavy, as you would expect. That said, we have benefited from great traction with visionary banks like Bank of America and BNY Mellon, and we now have increasingly progressive conversations with a huge tranche of fast following banks that see the logic in our approach. Existing payment partners and the newer tranche of payment fintechs love our approach. We are overwhelmed by their response to us, as a potential sales channel and as a team that gets the way banks function. There is a real desire among banks and MSBs to improve their FX payment offering to emerging markets, and at the same time there are modern payment businesses that have invested in robust platforms that satisfy the needs of financial institutions. The key is reducing the technical barrier to integration between them, and that's where AbbeyCross comes in.

Olann, the AbbeyCross ABX platform consists of two products. Please tell us a little about what they each do.

ABX Studio addresses the regulatory and service/price transparency challenge for banks in that it provides unique FX market pricing data specifically for payments. For those using it now, it's generating greater transparency, useful insights and enabling much-needed benchmarking capability for their regulatory functions and with clients when price benchmarking matters.

ABX Sync uses the same data set, from the same providers above and is fully permissionable for both banks and

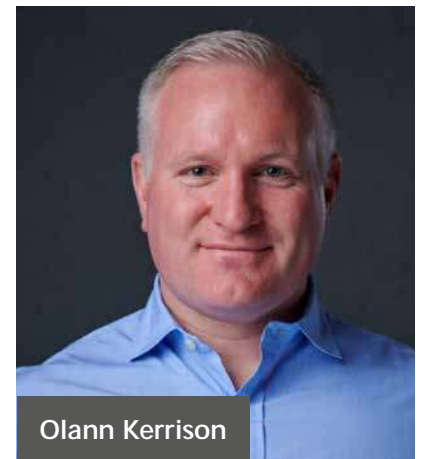
partners. This service and pricing data on the Sync platform gives users the ability to execute FX trades and transactions, send payment instructions to payment partners and push the required settlement and pricing data into middle and back office functions.

How would you summarise the main benefits of the platform and why it's a real game changer for the industry?

For bank clients consuming market data and analytics via ABX Studio, the platform provides benchmarking capabilities for currency corridors where this visibility has traditionally not been available. It also enhances regulatory and supervisory compliance by storing supporting evidence for pricing queries, and offers greater insight into the capabilities and choices in the wider market. Payment partners pricing into the platform can expand their reach and visibility with key clients and prospects, and simplify the delivery of that data through AbbeyCross's flexible platform and distribution methods.

When it comes to bank clients executing FX and payment instructions via ABX Sync, there is a significant reduction in integration and platform maintenance costs, while also increasing speed to market and mitigating contingency risk. And they gain visibility not only for FX pricing, but also settlement service data like delivery timeframes, transaction limits, payout rails and permitted flow types – for both existing and potential providers. Payment partners can access more customers, more quickly, and benefit from a channel that goes beyond FX pricing to shed light on settlement capabilities that many have invested heavily in, but struggle to convey to bank partners.

What types of firms are you targeting in the cross-currency trading and settlement space?



Olann Kerrison

We have three main verticals for those clients consuming FX rates via our platform and originating FX trades and payments – banks, MSBs and NGOs. Many banks have reached a point where their FX proposition for outsourced payments is ripe for change, and they view AbbeyCross as the most effective means of making that change. For MSBs and NGOs with material flows to emerging markets, price and service competition is very important, so too is streamlining operational and trading processes across a number of providers to different markets. Our platform is focused on the wholesale market, and therefore we do not target corporates directly.

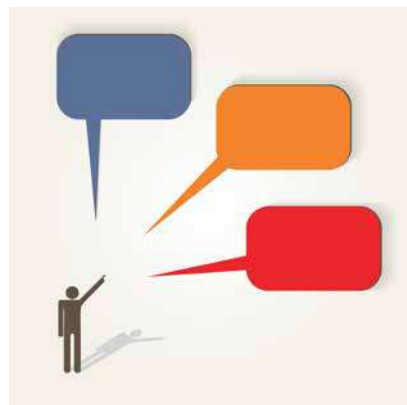
What are the latest developments with the AbbeyCross solution and what can we expect to see next as you roll out new features and functionality?

Based on client requests, we have broadened our dataset and platform functionality to include non-USD-based pricing against exotic currencies. We are also working with clients and payment partners to incorporate important payment service level data such as delivery timeframes and permitted flow types to aid route selection via our orchestration capabilities. This will also be available via Rest API. And we are working with newer tokenised and digital settlement providers to offer access to these services through our platform without requiring new build on the part of the bank.



Partner Viewpoints

We asked a selection of firms that are working with AbbeyCross to tell us a little about some of the issues associated with Emerging Market payments and what developments they would like to see to improve the situation.



CROWN AGENTS BANK



Colin Digby is Global Head Strategic Client Coverage, Emerging Markets FX & Payments at Crown Agents Bank (CAB) which is a UK-regulated, certified B Corp bank and provider of wholesale foreign exchange and cross-border payment services connected across developing, emerging and frontier markets.

What are some of the key challenges you have been facing in the Emerging Market payments space when acting for a bank?

A key challenge that we face when working with a bank is its ability to fully engage technically through APIs or directly through system integration. Resource or budgetary constraints often delay technical integration projects and despite a strong desire to work with CAB, banks often take a lot longer to fully integrate and therefore the realisation of the value add we offer is consequently delayed. Functionality within a bank to work with multiple providers of FX Payment services can also be an issue due to the bank's existing system constraints.

ABX is a new idea in the payment space. Why did you choose to work with AbbeyCross?

We chose to work with AbbeyCross (ABX) because we believe that they offer a new paradigm in the Bank EM FX space, led by a proven team of FX specialists. Additionally, ABX provides a unique opportunity to deliver a single integration point for banks, which in turn seamlessly delivers access to additional FX partners, such as CAB, much more easily. The ABX payment layer also enables banks to enhance their payment capabilities and the decision criteria associated with their partners. Much of this functionality simply doesn't exist within many of the banks today, so we fully expect this to enhance CAB's ability to service clients needs.

To what extent do you feel that more transparency of service and/or price for these services will shape the future cross-currency payments market?

There is a huge demand from banks to achieve incremental options for service and greater transparency of pricing. Single partners not only deny them these opportunities to deliver this, they also result in a single point of failure. Contingency is equally important. Greater levels of competition and enhanced service levels will result in better products and client service.

CORPAY



Mark Frey is Group President of cross-border solutions at Corpay which is a global S&P500 corporate payments company that helps businesses and consumers pay expenses in a simple, controlled manner.

What are some of the key challenges you have been facing in the Emerging Market payments space?

One of the key challenges we face in growing our business amongst



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Partner Viewpoints

larger financial institutions is that each bank comes to the table with its own legacy technology infrastructure. Even if we build a custom integration with each to connect directly with their technology respective technology platform, the banks themselves often don't have the necessary resources from their technology teams to integrate with us. What AbbeyCross does is provide a single point of integration for each bank to connect with multiple counterparties, thereby creating somewhat of a marketplace for these institutions to engage a range of suppliers via one single integration.

Why did you choose to work with AbbeyCross?

AbbeyCross understands the space in a holistic fashion. They understand the compliance, technology and market needs of the bank clients as well as the service providers like us that provide liquidity and payment execution on the platform. We speak the same language so it a seamless conversation when it comes to working together to solve the unique challenges that our shared financial institution clients have.

What are your priorities when it comes to improving FX payments?

Our primary goal is to provide direct market access, improved liquidity and payment execution for northern hemisphere banks who are required to make payments to the developing world and southern hemisphere for their clients. In all cases, we want to offer technology automation that reduces friction and transaction costs so as to deliver an improved customer

experience and more reliable, cost-effective payments.

What impact on your business could substantial improvements to the EM payments process have?

We expect that our partnership with AbbeyCross will allow us to streamline the onboarding process and fast-track the technical integration of working with financial institutions, allowing us to begin working with more banks, more quickly.

DANDELION PAYMENTS



Daniel Canning

Daniel Canning is Managing Director at Dandelion Payments which is a diverse cross-border payments platform, delivering real-time payments to bank accounts, mobile wallets, and cash pick-up locations.

What are some of the key challenges you have been facing in the Emerging Market payments space when acting for a bank?

A major challenge for banks in the Emerging Market payments space is access to exotic currencies. Dandelion offers on-demand liquidity as it holds inventory in many exotic currencies around

the world. Due to the significant flows that it manages into those currencies, Dandelion offers highly competitive rates. Dandelion is a complete Emerging Market payments solution because it delivers access/competitiveness to the exotics together with the industry's most capable payment rails into 198 countries, including unmatched real-time connectivity and best-in-class compliance.

Connectivity or new integration is always a changeling for a bank when dealing with a non-bank FI. What do you think they could do to make this easier for payment partners or FinTech's?

Dandelion flips this question around and proposes a highly flexible solution to banks offering a multitude of ways to connect or send payment instructions, from SWIFT-formatted files to a modern, highly configurable API connection.

To what extent do you feel that more transparency of service and/or price for these services will shape the future cross-currency payments market?

Transparency and speed are the two key characteristics that are modernizing the cross-currency payments market. Traditionally, cross-border payments have been slow with little transparency re: the status of the payment and little predictability/certainty re: the availability of funds and how much local currency the beneficiary will receive. Dandelion solves all of these problems through 100% direct connections to domestic payments rails to deliver end-to-end traceability, speed, and on-time arrival, with the guarantee that there will never be any correspondent or intermediary fees.

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Navigating the future with GenAI in Capital Markets

Artificial Intelligence (AI) is not news. Everyone's smartphone, tablet, laptop and desktop use AI to identify images and look for patterns and connections. Generative AI goes one step further: creating text, images and videos from AI data.

A 2022 Gartner report revealed 80% of CFOs wanted to invest more in AI technologies by 2025. Steve Rodgers, Chief Technology Officer in Analytics at Beeks Group, comments: "There is no doubt about the tremendous transformative power of GenAI to accelerate many aspects of financial firms' business. As MSPs in the financial space we are both excited about the possibilities and wary about the challenges that GenAI can bring." These include:



Steve Rodgers, Chief Technology Officer in Analytics

Cost

Rodgers says: "GenAI advances in the finance sector are hampered by the economics of scarcity in skilled resource." Add into the mix the cost of GPU hardware and subsequent model training and updating, the barriers to entry are not insignificant - even more so when attempting to adopt AI solutions in colocations without the huge power of Cloud on tap.

Regulation

Commenting on the slowness of regulatory bodies to keep up with the rate of change, Beeks' Chief Information and Security Officer Oscar Neill says: "Back in January 2024 the National Cyber Security Centre released a paper stating advanced uses of AI in cyber operations are unlikely to be realised before 2025.¹ Six months later there are already Proofs of Concept up and running, but there are no traditional ISO controls yet in place to cover security concerns. With legislation and governance lagging so far behind developments there is nothing to give firms assurances about security."

Security

Explaining further Neill says: "The connectedness between AI systems is clearly a strength but as businesses

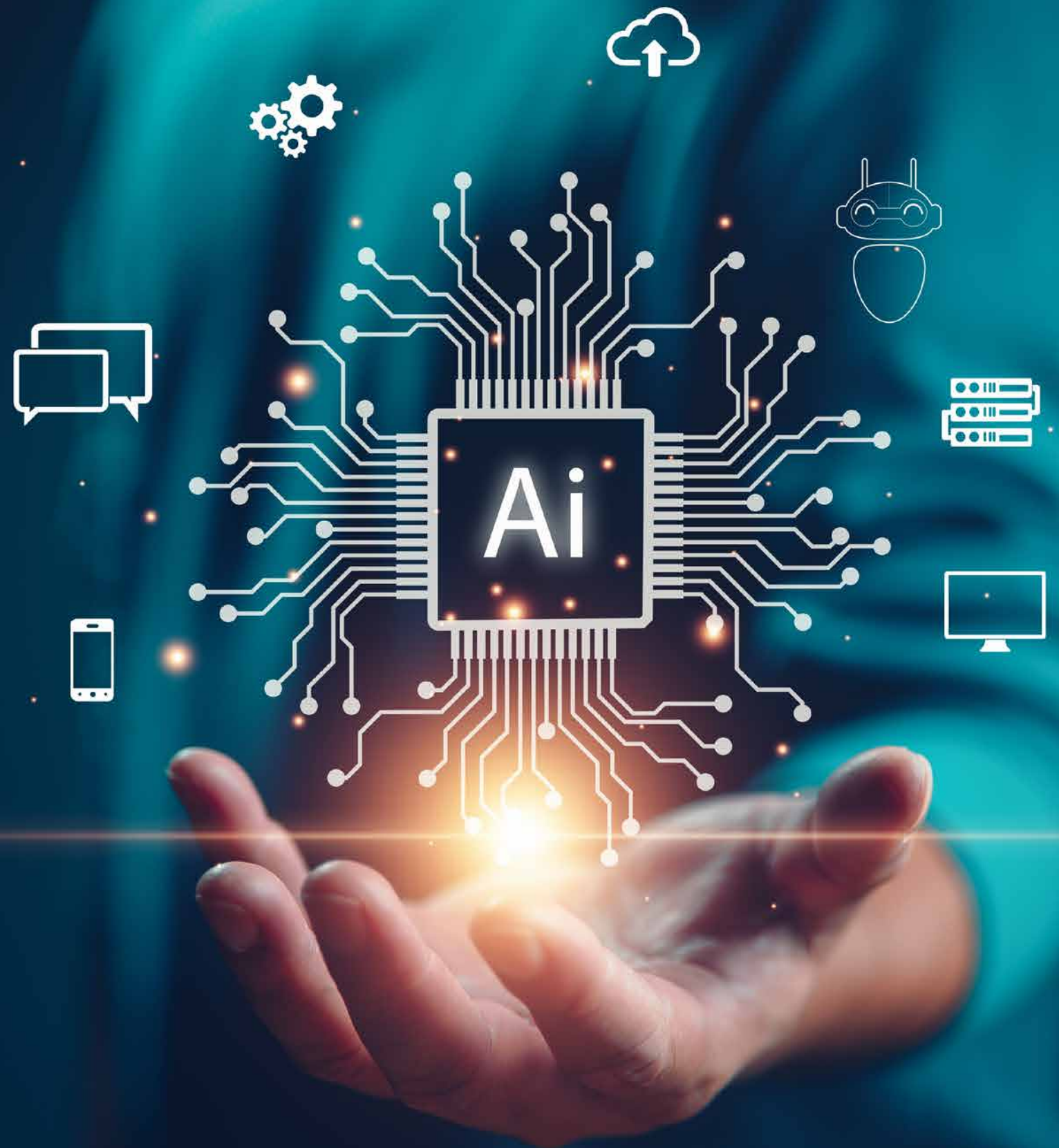
increasingly require tasks to be automated, connectedness potentially poses a huge security problem. Novel cyber-attack vectors are emerging, with a mode of attack that is two to three times cheaper than human hackers. These can strike both live and training data, poisoning models before they are even put to work," says Neill. "They can also coax 'safe' AI agents into exploiting known vulnerabilities in software systems."

Privacy

With AI listening to conversations, reading documents and social media, analysing images, processing biometrics and location data, we live in a reality where individual and corporate privacy are at risk of significant dilution. "In the financial



Oscar Neill, Chief Information Security Officer



1. <https://www.ncsc.gov.uk/report/impact-of-ai-on-cyber-threat>

Navigating the future with GenAI in Capital Markets

sector this is anathema," asserts Rodgers.

Irresponsible use of public accelerators such as MS CoPilot or Chat GPT can reveal strategic intent to a damaging degree, yet these types of online applications are being used increasingly by employees across all levels of business organisations. "Firms need to enforce clear AI adoption policies to protect their privacy and that of their employees and customers," he says.

Accuracy

The financial industry lives or dies by the accuracy of its lightning-fast data. However, the more complicated AI models become, the more crucial frequent retraining on fresh data becomes too. Whilst this is expensive, without it models can become prone to AI hallucinations, making up patterns that are not real. This raises serious doubts in the output.

"Retrieval Augmented GenAI (RAG) is an emerging architecture that can help - enabling dynamic lookup of new data and fine-tuning of the models without expensive retraining," comments Rodgers. "Having smaller models which can operate entirely at the Edge (which for financial firms is often a colo or Exchange data centre) will also help address latency concerns, as well as cost of use and privacy issues. Just look at what Apple, Samsung and Google are doing to optimise AI models on the upcoming generation of smartphones, and imagine the power of this applied to financial markets use cases," he says.

INFRASTRUCTURE INFORMATION TO ASSIST DATA CENTRES AND CUSTOMERS

There is scope for MSPs to train AI models on infrastructure data to provide better Network Operation Centre (NOC) support. They could

also allow their customers to bring their own AI to the infrastructure data more easily. Rodgers says: "Embedding AI alongside our Analytics platform will enable predictive forecasting to identify anomalous behaviour and will provide an additional steering signal for trading systems."

STREAMLINING OPERATIONS FOR QUICKER SETTLEMENT CYCLES

As Exchanges strive for tighter T+1 Settlement Cycles, they can be delayed by the time it takes to review and take a position on the hundreds of daily Corporate Actions they receive. Rodgers comments: "Since these notifications do not follow a uniform or pre-defined format there is some interest in using GenAI to develop conversational summaries of Corporate Actions to help determine stock positions much more quickly and efficiently."

NEW REVENUE STREAMS

The lid is set to be popped off the

Market Intelligence possibilities as prudent GenAI inferences enable the curation and packaging of raw market data into saleable artefacts. The 'democratisation' of market insights through data monetisation can drive competitive innovation and enable smaller firms to take advantage of advanced analytics.

"This is not necessarily a field that Beeks would enter into ourselves," says Rodgers, "but it is definitely an arena that we could support with optimised infrastructure and strategic partnerships."

FORECASTING

"Being able to predict the future is gold in Capital Markets businesses," says Rodgers. "We can see that advancements in the Large Language Models (LLMs) underpinning GenAI are augmenting traditional Machine Learning (ML) techniques to allow for accurate forecasting with reduced costs and time to market."

BEEKS RESPONSE

"Beeks have listened to capital markets participants since 2011 and have built our Infrastructure-as-a-Service (IaaS) offering entirely in response to their needs and concerns," says Rodgers. "We are dedicated to ensuring our customers can focus on their strengths without having to worry about the performance, reliability or security of the underpinning infrastructure. There is no reason for us to deviate from this in the context of AI."

Beeks has gained a reputation for extreme low latency compute on automatically monitored networks, providing cost-effective, elastic access to resource, and smart, dynamic use of hyperscalers' bandwidth, in fully secure co-located private cloud environments.

Beeks is now considering which AI features will benefit its colo customers, including low latency AI, direct access to GPU-capable servers, and API access to GPU-accelerated hosted models. "This makes Beeks vital participants in the conversation about GenAI in the financial sector," Rodgers says.

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Exploring the growing importance of technological advancements in FX trading

FX traders have much to gain from wider use of technology, but the full impact will only be felt once use cases have been verified and users are confident that the appropriate controls are in place as Paul Golden discovers.



Paul Golden

In the 1960s, Stanford computer scientist Roy Amara told his colleagues that the effect of advances in technology is never fully understood. Or in other words, 'we overestimate the impact of technology in the short term and underestimate the effect in the long run'.

In this context, a May 2024 paper from Krissy Jones (co-founder of The Forex Library) entitled: *The Future of FX Trading: Exploring the Intersection of AI, Open Innovation, and Industry Evolution*, is a useful reference point for where the use of trading technology is now and where it might go.

She suggests that open innovation in FX - underpinning AI - represents a chance to revolutionise FX trading through the development of intelligent systems

that may adapt to transient market conditions.

One of the important potential applications of AI in FX trading is the development of predictive models that can point at a move in the market and a trading opportunity, while another is the development of intelligent trading systems that can perform automatic trading based on predefined rules and algorithms.

According to John Stead, director of sales enablement and marketing at smartTrade Technologies, there is a problem of too much information because everything has been electrified.

"Using machine learning could help segment that data by different criteria, such as how clients are trading," he says. "You could look for patterns and groups of similar behaviour from clients and then see where those patterns change, which means where a client's remit or behaviour has altered, for example."

Machine learning could also be used to look for upselling opportunities by examining all the trading data of similar clients to see what products and solutions they are using and which are suitable candidates for an upsell.



Exploring the growing importance of technological advancements in FX trading

“The more complex the technology gets, the more you need to make sure that you have safeguards that are as advanced as the technology - and if you can’t put these safeguards in place you can’t use the technology”



John Stead

“The other buzzword at the moment is large language model co-pilots, which allow you to use natural language to query data,” says Stead. “Ahead of a meeting with their bank, this could give a firm an insight into their performance and whether anything significant had changed.”

DEPLOYMENT GAP

However, in terms of deployment he acknowledges that there is a gap between where the technology is and how the banks are using it.

“We have live platforms with a co-pilot embedded but not all clients are ready

to use it because of questions around confidentiality of data and cyber compliance,” Stead says. “It is the job of the vendor to develop the technology, to see where it can go and get feedback from clients because if that is where the market is going, the sooner we start exploring the technology the better.”

Given the rate of adoption of machine learning technology, Stead reckons it will be a few years before we see widespread use of large language model co-pilots as banks will want to explore the technology and look for potential issues before they deploy it.

The global FX market is fragmented and complex, creating massive data lakes. Enabling AI could provide a mechanism to connect these vast data sets and allow for analysis of patterns or correlations which are currently lost to normal algos.

That is the view of Bart Joris, head of FX sell-side trading at LSEG, who adds that the addition of generative characteristics could also help firms continuously fine tune their models

with comparisons of new data or enhanced screening.

“It will be an evolution in how market infrastructure currently operates, but FX is a market that will lend itself more easily to these new technologies given that large amounts of data are already stored electronically in a structured way – a prerequisite for AI,” he says.

Jones suggests that blockchain FX trading will create an environment for peer-to-peer transactions, reduce settlement times and act as a disintermediation tool to reduce costs and provide transparency.

BLOCKCHAIN BLOW

There has been a lot of discussion about the role of blockchain technologies and smart contracts at various industry events. However, Stead says the topic rarely comes up in client meetings aside from conversations around the impact of T+1 settlement.

“The questions we hear are ‘how can I understand my clients better?’, ‘How can I deal with the multitude of information?’, and ‘How can I achieve lower latency and more competitive pricing?’,” he says. “For me, blockchain is a big open source database, although there is obviously a lot more to it than that. I don’t think there’s a big problem to solve in FX that needs the blockchain.”

There are other products where smart contracts could be very useful, for example on the equity side in relation to tokenisation of assets, adds Stead. “We provide crypto trading solutions for clients and obviously that uses various blockchains, but it is purely for crypto assets rather than FX.”

When asked how blockchain technologies and smart contracts could contribute to creating a more

“The principle of ‘garbage in leads to garbage out’ will apply here. The key will be to control the processes and deployment of AI to enable the desired logical outcomes in the end results of the model”



Bart Joris

secure, transparent and efficient FX trading ecosystem, Joris observes that shifting outcomes is a key change to previous modelling as input and in-depth scanning will change the end result, which will create resistance due to uncertainty.

“However, I believe this will be temporary,” he says. “AI modelling comes with structures around the creation, control, accuracy, change and validation of the outcomes including the data sets. The principle of ‘garbage in leads to garbage out’ will apply here. The key will be to control the processes and deployment of AI to enable the desired logical outcomes in the end results of the model.”

With regards to blockchain, this technology can improve transparency due to its (open or private) ledger infrastructure, but in order to become really successful there needs to be a valid use case.

“The best use cases are probably in the back office, particularly settlement,” acknowledges Joris. “However, whilst critical, the back office is a cost centre for many banks and so investment can be minimal.

So unless there is a real driver such as revenue, cost or operational risk efficiency, its ability to transform the market is limited - although T+0 or actions by central banks could initiate a shift.”

ANALYTICS ADVANCE

Many in the FX industry are excited by the potential of big data analytics and specifically how it can be leveraged to deliver insights that will help improve trading and business performance.

The more data, the greater the insight firms have. AI will be able to do this more quickly and on a larger scale than ever before and find correlations that drive or enable FX movements which would not necessarily be visible to the human eye or algo.

“Continuous back testing of models is also possible with AI, but the migration to the cloud is also a key element,” explains Joris. “It will lead to better models and trading signals being integrated in automated trading processes or being visible to manual traders. They can interact

with structured or unstructured large language models and data will further revolutionise the way markets currently operate.”

For example, via pre-trade transaction cost analysis, comparisons could driver greater competition in favour of liquidity consumers.

According to Jones, there is growing stakeholder demand for transparency and accountability in business operations. This has prompted firms to use energy efficient technologies such as low-powered computer systems and more efficient cooling systems to reduce the amount of power consumed.

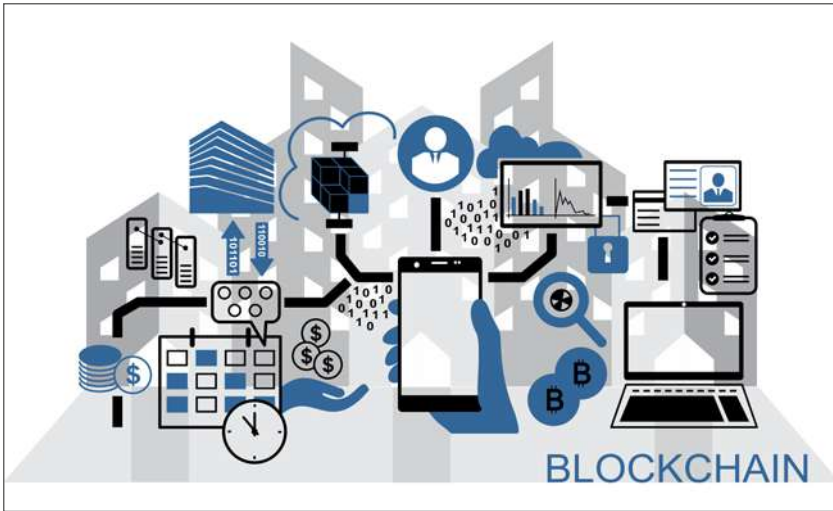
“Green FX is currently only focused on whether data centres and offices are powered by renewable energy,” says Joris. “But I think this will change as the industry adopts more modern technology and diversifies its modelling. For example, firms with less focus on ESG could end up paying a wider spread than others or we may see a formation of dual markets like we have seen in debt lending.”

GREEN INDIFFERENCE

Sceptics might suggest that much of the noise around green technology and green innovation is as hypothetical



Many in the FX industry are excited by the potential of big data analytics



Blockchain technology can improve transparency due to its ledger infrastructure

Exploring the growing importance of technological advancements in FX trading



AI could provide a mechanism to connect the vast data sets in FX

as that relating to blockchain and Stead accepts that this topic is not at the forefront of traders' minds.

"I was at a conference a while ago where there was a discussion around data centres and their carbon footprint and the consensus was that if you had a data centre in the Nordics, for example, where they use a lot of hydro and wind power, the carbon footprint of your data centre would be quite low," he says.

Corporate social responsibility may be one of the criteria considered at the RFP stage, but it is clear that factors such as flexibility, latency and stability are the overriding considerations.

"So technically we could imagine a client saying that they would like my data centre to be located where the carbon footprint is lower," adds Stead. "But then you would have traders expressing concerns around latency."

As for whether there are any specific strategic issues that FX trading firms need to bear in mind when embarking on technology upgrades or technology integrations, Stead emphasises the importance of setting clear objectives and goals.

"The most successful clients have thought very clearly about what are they trying to

achieve within the bank and have secured a high degree of consensus as to what the objectives are," he says. "This means you have as few conflicting viewpoints within departments about the goals and objectives of a project as possible."

Because replacing a platform is a complex and costly process, clients are encouraged to think about what they want to be doing in 2-5 years' time and to work with a vendor that is committed to AI and machine learning.

On the question of whether there are any obvious risk factors in using AI and machine learning from an FX perspective, Stead observes that any change carries an element of risk.

"Staying the same for ever is not an option, but when using AI and machine learning it is sensible to understand how it is making its decisions and how it works because if you don't you are leaving yourself open to regulatory issues when something goes wrong," he says. "It is no different to employing someone – they have got to have proper oversight and you have got to understand what they can and can't do and make sure that they understand."

SAFETY FIRST

Stead refers to the case of a bank that had to pull some of its models because

it couldn't prove how they were deciding on executions to the satisfaction of the regulator. While vendors can come up with very interesting technology, it has got to be verifiably safe and not using some kind of bias in a particular way that doesn't make sense.

Then there is the security consideration – does the deployment of the technology introduce a new cyber security threat? For example, could the platform decide to trade on its own account? This level of sophistication may not be available right now, but firms need to be aware of potential operational and regulatory compliance risks.

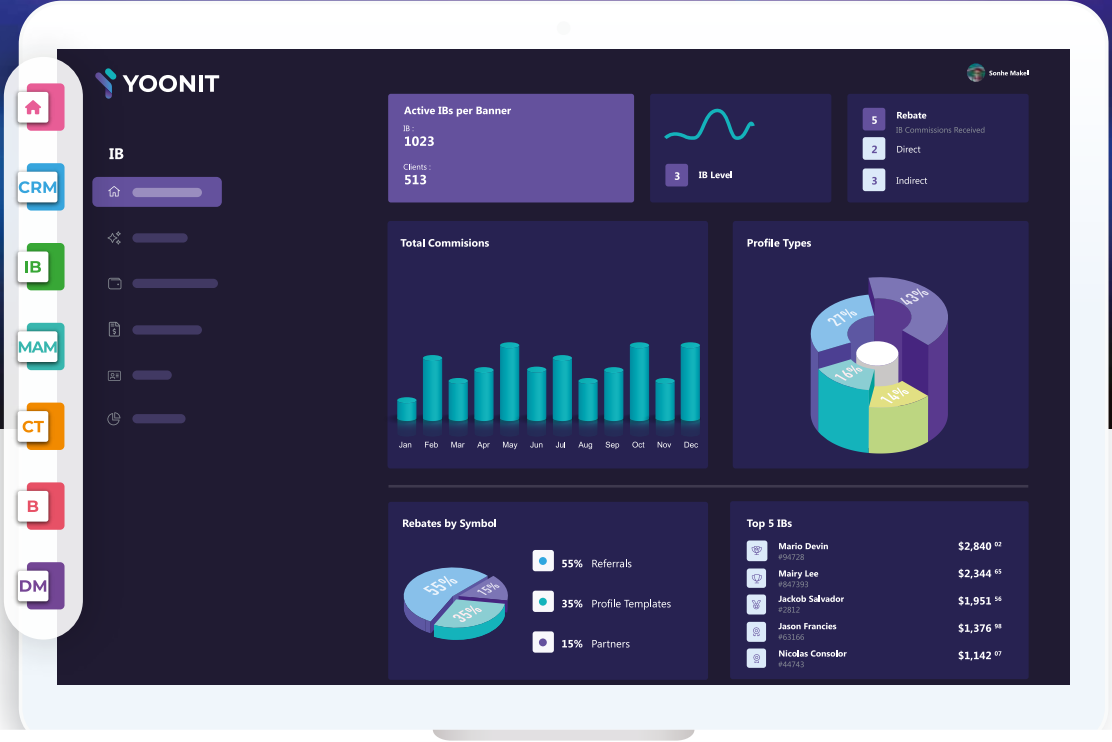
"The more complex the technology gets, you need to make sure that you have safeguards that are as advanced as the technology - and if you can't put these safeguards in place you can't use the technology," says Stead. "That is what is holding banks back in using a lot of new technology. If they can't be confident that it is safe to use, they won't use it." In general, the more data becomes available, the easier it is to identify misuse. Digital transformation also enables access to markets and information to a wider community, which increases transparency and fairness in the FX market.

But Joris cautions that there is a catch with these newer models because as they look for optimal execution, use cases such as pre-hedging could be suggested as a better result (if used correctly). So it will be important to ensure the necessary control and oversight on the models.

"AI is driving the push to better models and data creation, but this means that controls and behaviour analysis of the models will be key," he adds. "A control framework should also be implemented with clear responsibilities, procedures and continuous monitoring of the model in production."

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