transforming global foreign exchange markets

e-FOREX

e-forex.net FEBRUARY 2021

INDUSTRY REPORT
Automation, algos and TCA

AI AND ML
Three trends to watch in 2021

REGIONAL SPOTLIGHT
Tracking increased growth of e-FX across the Nordic Region

OFFERING DIGITAL ASSETS
How institutional trading firms can overcome the challenges

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COVER INTERVIEW

MARC BÜRKI

CEO of Swissquote Group Holding Ltd

LIQUIDITY • RISK MANAGEMENT • STP • E-COMMERCE

Welcome to

e-FOREX

transforming global foreign exchange markets

February 2021

Several articles in this edition highlight the increasing use of algorithmic trading and TCA amongst FX market participants. Our industry report has pointed out that many buyside firms relied on bank algos during the early days of the Covid-19 crisis last year and that as demand for these toolsets has increased over the past year, the type of users has also broadened, and now ranges from hedge funds and asset managers to corporations, smaller managers, and even pension funds.

This month's regional perspective feature on the Nordics backs up these trends by reporting on how FX algo execution is gaining adherents and being increasingly used amongst Nordic buyside firms as they look to control exactly how they want to source liquidity and access the market. Algo usage is also playing a role in optimizing liquidity for the growing trading volume in emerging market currencies and even in the less liquid NDF markets, algo execution is becoming more mainstream. At the same time as this demand for algos grows, TCA for FX has really started to gain traction as a means of assessing performance and ensuring compliance. Once again the unprecedented volatility since March 2020 has intensified buy-side usage of TCA tools which are increasingly being used to mine the information prior to the trade. These pre-trade analytics are becoming more central to FX trading and are also being employed to evaluate algos. We expect to be increasing our coverage of TCA as vendors continue to ramp up their offerings to deliver the next generation of toolsets to meet higher demand in FX.

A final thought about the arrival of the so-called new generation of retail traders which is the subject of our brokerage operations article. The implications of what recently happened with GameStop stock where retail money looked like becoming a systemic threat for hedge funds on the other side of its trades are becoming clear for our own market. If tech savvy and highly co-ordinated retail investors continue to exert greater influence on the markets then all brokerages need to quickly figure out how they can best meet the complexities and hidden risks of serving these traders by ramping up their own risk management and data analytics capabilities to provide more sophisticated alert systems and response scenarios.

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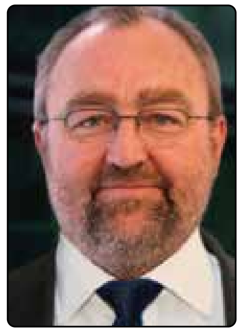

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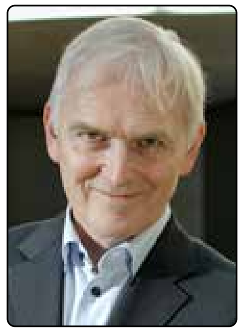

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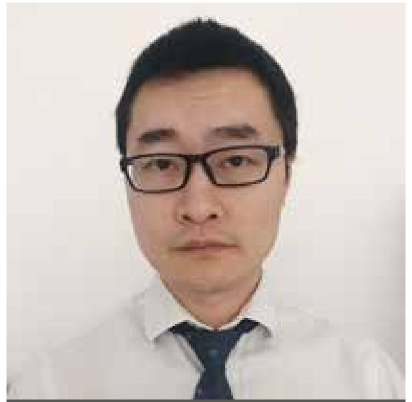
HSBC launches Sympricot chatbot

HSBC has launched a new chatbot that uses artificial intelligence (AI) to give clients instant pricing and analytics for foreign exchange (FX) options. Sympricot allows HSBC to gather complex trading information and deliver it to clients quickly and accurately, reducing operational risk and eliminating repetitive manual tasks. The chatbot uses natural language processing (NLP), a form of AI, to analyse information from numerous sources on market colour, pricing and liquidity, digitize it and distribute it to clients as well as internally within the bank. Using advanced modelling, Sympricot provides easy access to information that would have previously been difficult to obtain, including event weightings, relative value analytics and volatility time-series charting. Combining data science with NLP provides users with a powerful interface to retrieve specific items of data quickly from a wide variety of sources. Allen Li, Global Head of eRisk for FX Options at HSBC, said: "The key advantages of Sympricot are speed and easy access to accurate information – often data or analytics that would otherwise be difficult to obtain."

Want to get the latest price run? Just chat to get instantaneous response



Allen Li

Digital Vega and Spark Systems announce partnership

Digital Vega and Spark Systems have announced a strategic partnership which both firms believe is exceptionally complimentary on many levels; products, geographies and a shared vision of both management teams. Headquartered in London, Digital Vega, a leading provider of FX Option trading solutions, will work together with Singapore-based Spark Systems, builders of cutting-edge low latency FX platforms, to create a true best of breed FX trading platform to service a diverse, global franchise. Commenting on this initiative, Mark Suter Executive Chairman and Founder of Digital Vega says "The partnership will allow both parties to leverage their respective relationships, geographical and regulatory strengths. Spark is domiciled in Singapore and active across the Asia Pacific region whilst Digital Vega is well established in EMEA and recently gained approval from the CFTC to operate in the United States. Working together, we will be able to provide a truly global solution."

Mark Suter

FX options trading grew by 26% on the FXall platform in 2020

FX options volumes on FXall reached new levels in 2020 with a 26% year-over-year increase. During a year marked by market turmoil in the wake of the Covid-19 pandemic, buy-side participants on FXall increasingly relied on FX options to hedge their currency exposure. Attracted by the greater transparency, audit trail, and operational efficiency of electronic trading, a wide range of buy-side institutions use FXall to access deep options liquidity. Expanding its already deep liquidity pool, FXall has also recently added Optiver as the first non-bank liquidity provider for FX options on the platform.

24 Exchange partners with Cobalt

In an industry first, 24 Exchange (24X) is offering dynamic credit management to participants on its multi-asset trading platform via Cobalt, the FX and Digital Asset infrastructure provider. Risk Hub, Cobalt's credit management system, is now available to clients of 24 Exchange's Non-Deliverable Forward (NDF) and FX Spot offerings, and will extend to FX Swaps when they launch later this month.

Dmitri Galinov

"The lifeblood of the FX market is interbank credit," explains Dmitri Galinov, Founder and CEO of 24 Exchange. "But the over-allocation of credit on third-party platforms can make it difficult for banks and credit intermediaries to have a complete, real-time picture of their risk, thereby creating unwanted exposure. Cobalt's dynamic credit offering solves this problem." Real-time updates of exposure and credit risk can be managed centrally on Cobalt's Risk Hub, extending credit to third party platforms such as 24 Exchange.

Spuerkeess selects Integral for FX technology solutions

Harpal Sandhu

Integral has announced that Spuerkeess has chosen the firms BankFX™ workflow and trading technology to support its eFX operations worldwide. Spuerkeess sought an experienced FX technology provider and selected Integral for its highly configurable cloud-based systems and sophisticated modular solutions. The deployment of Integral technology has delivered advanced risk management services and enabled full automation of the group's execution workflow. "We partnered with Integral having sought an eFX system that allowed us to differentiate our offering using advanced and configurable technology," said Claude Origer, Senior Vice President & Head of Department Global Markets at Spuerkeess. "BankFX technology spans the entire FX lifecycle and offers a full-service solution to clients for a fixed monthly subscription and zero brokerage," said Harpal Sandhu, CEO of Integral. "We are delighted to partner with Spuerkeess and offer them scalable technology to meet their evolving requirements, while helping them deliver a fully bespoke service to their institutional client base."

Edgewater Markets launches EdgeFXAsia

Shilpa Dubey

Edgewater Markets has announced that it has launched EdgeFXAsia to eliminate major latency issues for regional clients. EdgeFXAsia is powered by the company's ultra-low latency proprietary technology. Commenting on the announcement, Shilpa Dubey, Head of APAC for Edgewater, said: "We have clients across the region who trade with us over GUI and API channels. By leveraging our regionally based front-to-back hosted solution, they can now connect to us with ease without having to invest in expensive hosting and networking connectivity, thus improving the execution quality and trading experience our clients have come to rely upon with Edgewater. We provide our customized solution at a lower cost and improved performance." Together with regional hosting of EdgeFXAsia, the proprietary HTML5 GUI developed by Edgewater Markets, clients can now connect locally to trade, removing significant latency issues that arise trading out of the region.

Genesis launches FX Prime

Genesis, the global financial markets software firm, has launched FX Prime, a trade capture application developed for FX & rates trading desks with Prime Broker integration. The application has been developed in partnership with XP Investments, United States based subsidiary of the Brazilian broker-dealer XP Investimentos, the largest broker-dealer in Brazil. XP Investments selected Genesis as their low-code application provider and the collaboration has empowered the firm to successfully automate legacy manual workflows, optimise and digitise operational processes and also to develop and deploy new products and services.

Stephen Murphy

Stephen Murphy, Chief Executive Officer of Genesis, said: "We are immensely proud of our partnership with XP Investments and delighted to deliver yet another sophisticated application built on the Genesis Low-Code Application Platform. Every investment firm is under pressure not only to optimize their operating processes but also to deploy new products and services to clients that are demanding innovation and digital capabilities."

CMC Markets selects AWS

CMC Markets has announced that it has selected Amazon Web Services (AWS) to help deliver the next phase of its digital transformation through accelerated delivery of new products and services. Instead of focusing on the undifferentiated heavy lifting of managing servers, by using AWS CMC Markets has freed up valuable development hours, taking our delivery time from 6 months to 6 weeks in turn allowing clients to benefit from the faster access to our new product innovations.

Brendan Foxen, Chief Technology Officer at CMC Markets commented: "Over the last 10 years, our product offering, trades executed and volumes of data have grown considerably. Adopting AWS and using the highest levels of abstraction and native services allows us to develop our product offering with a far greater speed and richness of customer experience, underpinned by the scale and reliability of AWS services."

Upgrades to B2Trader Matching engine

B2Broker, a liquidity and technology provider of solutions for the crypto and Forex industry, has added a new range of features to its matching engine, B2Trader, enabling client demands to be met in record time. B2Trader is used by many of the world's best-known exchanges, MTF Brokers, Security Exchanges, Market Makers, Spot FX Brokers and EMIs, with the job of matching an incoming market order of the user with the existing limit order of another user. The engine works 24/7 in parallel with the round-the-clock rhythm of the crypto markets without any breaks. The latest features combined with external integrations further enhance B2Trader to deliver a matching engine with the ultimate in performance and functionality, while ensuring that all market participants are given the best execution.

oneZero launches institutional offering

e-Forex spoke with Andrew Ralich, oneZero's CEO, to learn how the technology gives users full control of aggregation, price formation, price distribution and risk management

Andrew Ralich

Please tell us about oneZero's Institutional Hub.

We're excited to announce the launch of oneZero's Institutional Hub. Our team has been hard at work on this new Hub, which allows clients to define all trading criteria with advanced aggregation, price formation, customized distribution, risk management and systematic hedging. Comprehensive price formation capabilities are used in conjunction with intelligence gained from oneZero's advanced analytics that allow institutional brokers and banks to analyze their liquidity provider performance and client trading behavior. The Institutional Hub user interface gives control back to the trader, presenting them with a simplistic way of executing complicated workflows.

What clients is the Institutional Hub designed for?

As a business, our goal is to create technology that solves specific challenges for specific audiences. The Institutional Hub adds to oneZero's suite of Hubs that also includes Retail Broker Hub and Liquidity Provider Hub. With the Institutional Hub, the technology is specifically designed for a wide range of sell-side clients from institutional brokers, prime of primes and regional banks. The solution enables customers to capture incoming executable quote streams from venues and liquidity providers, including support of multiple streams each with multiple levels of depth. Users can then integrate these streams, including transforming them to adjust for costs such as brokerage and estimated costs of trade rejections, into distinct pools of liquidity that drive both pricing functions and serve as destinations for trading activity.

What else does oneZero do for these firms?

We give institutional brokers and banks more control over their liquidity function. oneZero empowers Institutional Hub clients to facilitate bilateral relationships between their customers and their liquidity sources. This is strengthened by Data Source's stored quote and trade data that is transformed into analytics that enable informed strategies. Users can collect all their quote and trade data in Data Source DNA and make it available to their own quant teams, third-party analytics providers or to oneZero's own analytics.

oneZero manages billions of quotes and millions of transactions every day

What else makes up oneZero's total offering?

Beyond the ones and zeros of our technology (no pun intended), we are committed to giving our customers the support they need. With over 100 staff, oneZero offers a follow-the-sun support model, with a global operations team based in Asia, Europe and the United States that provides customer support 24/5.5 to clients in their own time zone. We invest heavily in support to make sure our clients have what they need to succeed.

What else has oneZero been working on?

We have been building out our complete institutional offering, which includes technology advancements as well as building out our team. We recently appointed Stuart Brock as Head of Institutional Sales, UK and Continental Europe. We have also been working hard on features specifically for our institutional clients, and we look forward to announcing them shortly.

Automation, algos and TCA

Exploring the future role of the trader and other key themes for e-FX

By Yue Malan, Senior Analyst at Aite Group

Yue Malan

The benefits of electronification in the foreign exchange market have been emphasized by the turbulence of the past year, with reported increases in the number of firms turning to algorithms and the widespread adoption of technologies to handle the pressures of working at home. However, the pandemic has been a reminder of the continuing importance of human discretion in FX trading, with many on the buy-side relying on their relationships with clients at a time of unprecedented volatility and uncertainty.

The goal of this article is to assess and highlight a number of themes, such as changes to average daily volume (ADV) over the years along the lines of geography, FX instruments, and electronic versus voice trading. Some of the topics that have dominated the industry at the peak of the pandemic will be discussed, such as the growing realization of automation in FX markets, algo adoption, transaction cost analysis (TCA), and the enduring value of human discretion as well as the skill set of the modern trader.

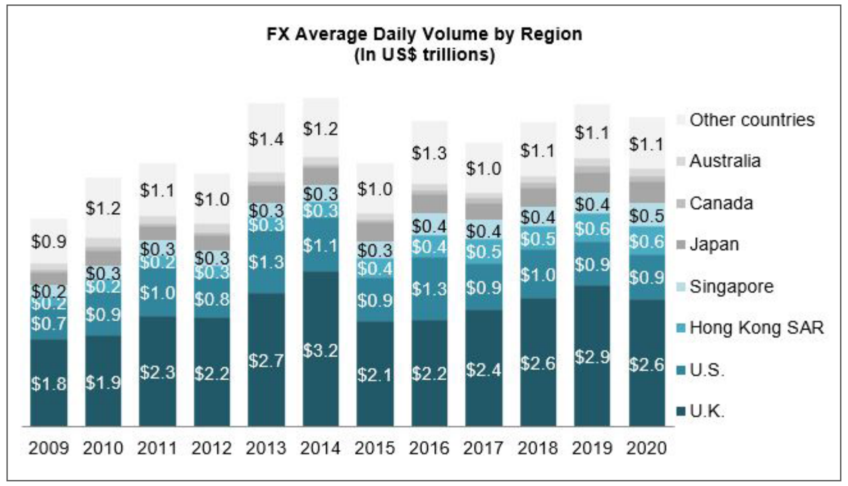
STATE OF THE MARKET

The U.K. has recorded the highest ADV by a clear margin each year from 2009 to 2020. In October 2020, the U.K. reported ADV of US$2.6 trillion, down 10% from the same month in 2019 while many of the other reporting centers remained constant without drastic change (Figure 1). From a growth perspective, Hong Kong, Canada, and Singapore experienced the most exceptional development, with a growth rate of over 100% over the past decade.

In the last couple of years, Singapore has gained traction with an influx of banks, nonbank liquidity providers, and trading venues setting up pricing engines in Singapore's data centers, fueled by the partnership with the Monetary Authority of Singapore (MAS) to expand their business in the financial hub of Asia—a trend that will drive up the trading activity in the region.

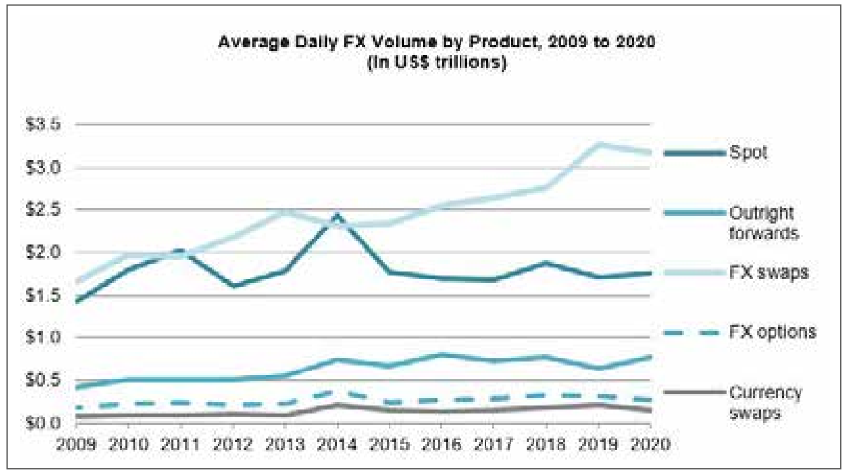
Since 2009, FX swaps ADV has grown by 90%, outright forwards by 85%, and spot by 23%. As an essential instrument for emerging market currencies, nondeliverable forward (NDF) trading continues evolving as market players strive to improve e-trading infrastructure and regulatory support. Further electronification and growing ADV necessitate automated trading of NDFs, as executable streaming is becoming mainstream and banks are offering algos to gain competitive edge. Trading at swap execution facilities (SEFs) experienced steady growth in the past three years, and off-SEF trading started to pick up activity levels with new trading venues joining the market.

Speaking of the broad consensus of further electronification across FX markets, Figure 3 demonstrates the percentage of trading volume in the U.K. traded via various electronic methods of transacting, including electronic brokering systems, single-dealer trading systems, and multidealer trading systems. Overall, 46% of total transacted volume was electronically



Source: Aite Group annual estimate (net gross) with data from AXFC, BIS, CFEC, FXC, FXJSC, SFEMC, TFEMC, and TMA

Figure 1: Volume by Region



Source: Aite Group annual estimate (net gross) with data from AXFC, BIS, CFEC, FXC, FXJSC, SFEMC, TFEMC, and TMA

Figure 2: Volume by Product

traded in October 2020. While e-trading has grown as a percentage of total trading, the growth is slow and inconsistent for non-spot products. Nonetheless, 69% of spot trading was transacted electronically in October 2020, a new high for spot over the past decade.

From a technology perspective, the industry coped particularly well with the unprecedented trading environment brought about by the COVID-19 pandemic. Buy-side firms are constantly searching for the next innovative trading solution, while streaming and algos offered by liquidity providers enable the sophisticated traders to achieve efficiency. The need for transparency and best execution requirements will drive more buy-side adoption of TCA and other trading analytics tools.

ALGOS PROVE THEIR VALUE

FX trading volume rose dramatically in March and April 2020, and many buy-side traders relied on banks' algos and outsourced easy tasks to banks so they could focus on more complicated trades. The debate as to whether it is best to buy or build when it comes to algos has subsided, as many buy-side funds have reported to be using more bank algos—partly due to the falling costs. Algo trading has proved to offer efficiency and performance optimization to traders while creating a revenue stream for the banks. The wider spreads have let algos to reject more orders, and the demand for reliable bank algos increased. As the market became more jittery in March 2020, the algos began to get more passive by resisting orders. There is a place for more aggressive algos, but some buy-side traders would prefer to use smarter, more passive algos. Firms that were already using algos expanded their usage this year. The number of firms using algorithmic trading strategies has increased and stayed high, representing a high proportion of trades.

The range of users has broadened as well, now ranging from hedge funds and asset managers to corporations, smaller managers, and even pension funds. Algo usage has also played a role in optimizing liquidity for the growing trading volume in emerging market currencies beyond the G10. Even in less liquid NDF markets, algo trading is becoming more mainstream. There has been a surge in liquidity providers wanting to trade NDFs via algos, and buy-side traders can see the cost savings by using execution algos for nondeliverable currencies comparing to trading against traditional risk transfer prices. Smaller fund managers will benefit more from this development as they outsource execution to banks' algos and then leave it for a day without sourcing new technology internally. However, the NDF market is less fragmented than the G-10 deliverable currencies; hence, accessing multiple liquidity pools can be difficult. The challenges of NDF algos are the wide range of liquidity levels for each currency product and various liquidity concentrations for certain dates.

Source: Aite Group annual estimate (net gross) with data from AXFC, BIS, CFEC, FXC, FXJSC, SFEMC, TFEMC, and TMA

Figure 3: Electronic Trading vs. Total

TCA COMES INTO ITS OWN

TCA for FX has already started to gain traction as a means of assessing performance and ensuring compliance. Increasingly, TCA tools are being used to mine the information prior to the trade. These pre-trade analytics give an indication as to what kind of spread to expect, and this is becoming more central to FX trading. TCA gives a clear picture of what works best. Some firms utilize TCA to conduct venue analysis and remove venues with which they do not want to interact. TCA is also being used to evaluate algos in FX, especially with algos being much harder to read and predict during times of turbulence.

The unprecedented volatility since March 2020 has intensified buy-side usage of TCA tools, as 10 years' worth of data from an unchanged market regime may be less useful than three months' worth of data from a different market regime. Spot spreads are around five to 10 times bigger than swaps, and buy-side firms are unlikely to find this data from a decade ago. Undoubtedly, TCA is a critical component for the overall workflow as it becomes part of the pre-trade analytics traders use to decide on their strategy. Consequently, TCA vendors have ramped up their development to deliver the next generation of tools to cope with the higher demand.

AUTOMATION HAS ENABLED THE NEW NORMAL

The changes brought about by the COVID-19 pandemic have seen FX markets follow the example of other markets, such as equities, that have for a long time now incorporated automation into their processes, as many firms see it as way to achieve a more efficient risk transfer. The widespread adoption of either cloud-based or vendor-hosted solutions has been particularly important for traders' ability to ensure a high degree of business continuity as the industry traded in the office for the kitchen table or a home study at short notice.

With many firms in major financial centers keeping their staff at home for the duration of 2020 and likely much of 2021, a more dispersed trading floor opens opportunities for technology vendors. While there were concerns that spending would slow as projects were put on hold, investment to enable automation has increased, with solutions designed with remote working in mind at the top of the agenda. Automation has also positioned firms with staff working remotely to manage issues around compliance and audit trails better than the more traditional methods, such as voice trading, would have permitted. Many firms have made it clear they would much prefer their buy-side traders to deal electronically rather than over the phone.

Wide spreads have posed technological challenges, and they were particularly pronounced in emerging markets. Liquidity providers refreshed their prices much more often than they usually would to protect themselves, and the display of the latest prices on execution management systems over traders' home internet caused issues. To cope with challenges like these, buy-side traders have reported building proprietary exception-rule-based logic to automate trades. This means that from the moment an order comes in through the point at which it is executed, the order must pass through a series of hoops by satisfying the safety criteria. Checks are likely to consider market conditions, spreads, volume, price, and limits. Pre-validation tables specify the limits and sizes for certain currency pairs at certain points in the day. Most of the orders are rejected at the beginning because the logic is yet to be refined, but over time, the trade process takes shape.

Many trading systems reported strong performance, and the trading environment held solidly with deep liquidity during the peak of the market stress. This underlines how important automation is to the industry's ability to weather unprecedented periods of volatility. Trading platforms have been rolling out new features and enhancements over the years to streamline the workflow. For instance, FXGO, FXall, and FX Connect all have been enhancing their auto-execution processes in recent years. The process is getting more granular and customizable, allowing traders to create different goals by componentizing every functionality. The key to well-designed automation is to provide flexibility, allowing clients to automate a piece of the flow and reduce a process from four mouse-clicks to one or two.

While rules-based automation for trade execution can increase efficiency, questions arise about its resilience within the context of the market stress and unprecedented trading environment.

HUMAN INTELLIGENCE IN THE ERA OF AUTOMATION

Many experts see the role of the FX trader in the future developing into something resembling a pilot in a cockpit. Even with a range of tools available, the individual is still very much in control of how those tools are deployed.

The pandemic, by creating a stress-test environment, has undoubtedly underlined the ability of modern technologies to realize business agility. However, while automation increases safety and efficiency, it is still best used as a machine in the hands of a trader rather than as an autonomous agent itself. The automation of braking in cars, for example, does not render the role of the human driver redundant. Automation is useful for certain segments of the trading process, but the industry is far from a time when the entire life cycle of a trade can be automated. There are always going to be elements that are best left to the trader's judgment. For example, NDFs and other derivative markets and unusual currency pairs are examples of areas that will require significant human discretion for the foreseeable future.

It is true that the skill set required of traders is changing, with the demand for quantitative skills in coding, computer science, and mathematics rising. But it is important to remember the human side to trading, as much of the communication and relationships between counterparties cannot be meaningfully done by machines.

FX Regulation in 2021

By Brian Charlick, Principal Consultant at CGI

Brian Charlick

In response to the 2008 crash by the G20, we have had an unending set of new regulations in Financial Markets since 2009. Fortunately, for the time being at least, the regulatory avalanche of requirements and regulation is beginning to slow.

Much of the attention has been around derivative trading and on transparency in services. The main themes to most of the regulation can be broken down into 5 areas.

The main area still being addressed by the regulators is in Capital Markets. The impact of this continued drive by the regulators on Forex is fortunately limited. The Forex market should not unduly be concerned with PRIIPS, UCITS for example, which is a big change to other Asset types.

There is one new regulation that will impact Forex outside of Capital Markets: the introduction of AML 5, the fifth directive on Anti Money Laundering due in 2021. We will come to that later. Returning to Capital markets, much of the regulations are now in place, with the Securities Financial Transaction Regulation (SFTR) being the latest at the end of 2020. The next step taken by the regulators is to clean up the exemptions and anomalies. To that point, the regulators are looking at Central Clearing and specifically Initial Margins. Finally, while not a regulation for 2021, the conduct of the Forex Market will be under scrutiny as the FX Global code is revised this year.

CLEARING

Since 2008, the regulators have sought to push the market to central clearing, indeed LCH ForexClear cleared approximately $19.1Tn in 2020. That is around 96% of the total cleared Forex activity and is approximately 20% of all Forex

FX Regulation in 2021

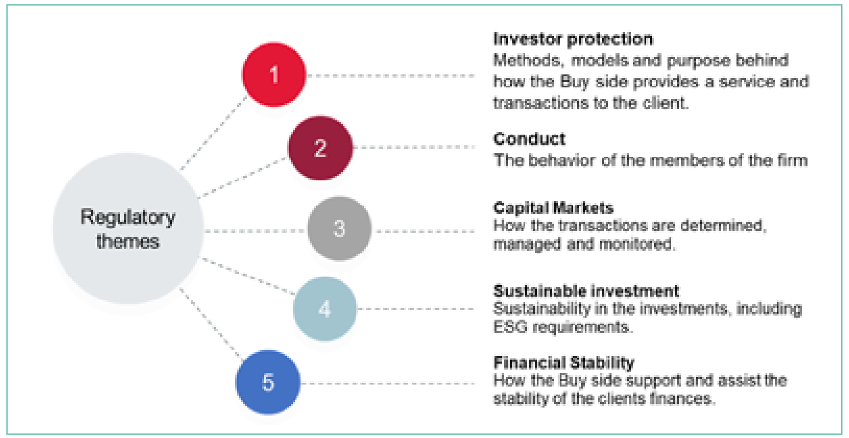


Figure 1

derivative activity. The regulatory push will continue through 2021. For a start, the Pension fund exemption from the EMIR refit obligation on clearing will be coming to an end at the end of June 2021. The exemption was provided as it was appreciated that they would "encounter difficulties in meeting variation margin requirements for centrally cleared transactions due to high cost (e.g. lower investment returns or transaction costs), risk of inefficiencies as a result of converting assets into cash" and therefore added cost to the investor as the pension fund would need to divest of some assets to provide the collateral in the form of cash.

This removal of the exemption will mean the Pension Funds will become incumbent to follow the clearing regulation of ESMA and FCA, where the requirements include the need to monitor the value of derivative positions in a range of assets classes, understand where the threshold has been breached and then inform the regulator of the breach, and then commence Central Clearing of the derivative transactions in that asset class (or where the threshold is no longer met, have the option to stop Central clearing). These obligations are already with the eligible Asset Managers.

The impact to FOREX is not just the potential additional cost, the question of efficiency and economies of scale dictate that where the derivatives of other asset classes are already being centrally cleared, it may choose to also clear its Forex derivative business. This of course will also depend on the counterpart also choosing to centrally clear. This could force the market to split, even if only temporarily, into centrally Cleared and Uncleared.

EMIR REFIT AND FX GLOBAL CODE

ESMA have been discussing the possibility of extending the scope of some actions to incorporate Forex trading. To date, only Forwards and Options are captured. However, there is some discussions about the effectiveness of the FX Global code. We are aware that the GFXC (Global Foreign Exchange Committee) are currently reviewing the code, with the aim of updating it this year. One of the main issues is the reluctance of many of the large Buy side to enter into agreement to adhere to the code. The Buy side are unclear of the compliance needs of the code and in some cases have expressed the view that it is simply "regulation in disguise". Indeed the commitment of the Buy Side has also been exasperated by the perception that it is too Sell side centric.

The extent to which the revision from the GFXC meets these needs and answers these questions will have a bearing on the discussions among the regulators to extend the scope of regulation to incorporate Forex spot trading to a greater or lesser extent.

Discussions with ESMA are related to the MAR review report published in September 2020 that identified that further analysis of the spot market was warranted. Against that view, the market have been at lengths to highlight that any changes to the practices of the Forex spot market would have a knock on effect to not only the Financial service industry at large, but also to the economy.

This issue will not go away with the amended code, but will continue, based on the size and scope of changes, the uptake and the perception of the regulators to the general conduct of the market. Will the Buy side join, based on the changes and pressure of possible future regulation, or continue to live outside the code? This could be a key to the future.

ANTI-MONEY LAUNDERING

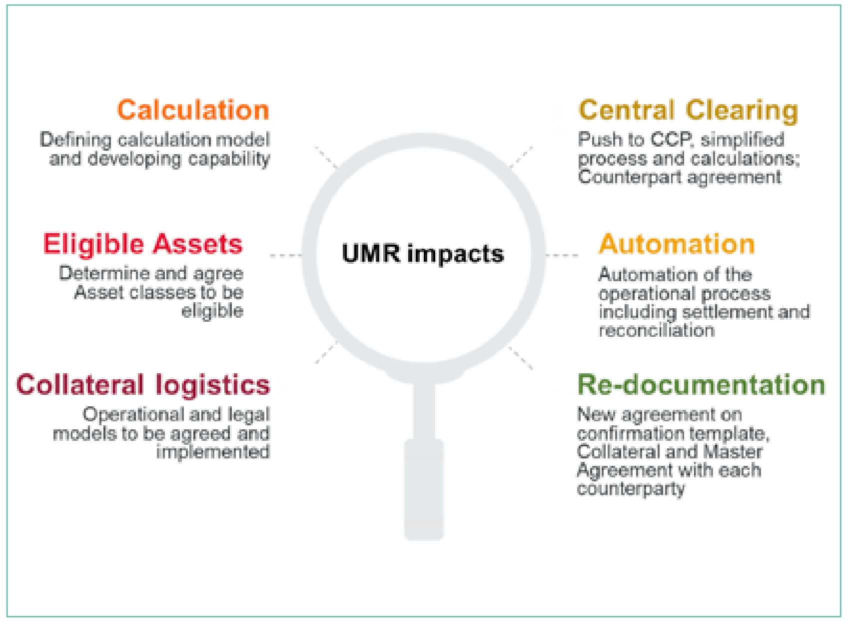
The Fifth Directive of Anti Money Laundering has a set of small but potentially time consuming changes. The main changes impacting Forex are:

- A new list of Politically Exposed Persons must now be maintained by each of the member states (and UK). Going forward, this will be the PEP list to be used.
- Electronic means of identification and verification will now be permitted where they have been approved by the national authorities.
- Finally, easier and free access to information from central registers will be available, and the sharing of information encouraged. However, this means each firm must ensure continued compliance with privacy laws, with secure processes in place should they wish to share the information.

The impact on Forex will be to update their own process around recoding PEP's, as well as electronic identification and verification. While this is not a significant change, each will require some time consuming changes to systems and processes.

UMR

The major regulatory change in 2021 will be the Uncleared Margin Requirement (UMR). This has been around for a few years now, with the roll out starting in phases from 2016, in the USA. The next and last phase will be Phase 6, which was due to go live in September 2021, and will affect smaller insurance/banking groups and asset managers with EU and US thresholds of $8 Billion or less. However, the deadlines were pushed back by 12 months last year, so that phase 5 for firms over the $50bn threshold is only going start in September 2021 and phase 6 will follow in 2021.



The UMR has set out the need for financial derivative exposures/Margins to be covered by collateral. Initially this requirement for Insurance and Asset managers was for Variation margin to be calculated and collateralised. While that went live in 2017, the need for Initial Margin is now becoming a reality.

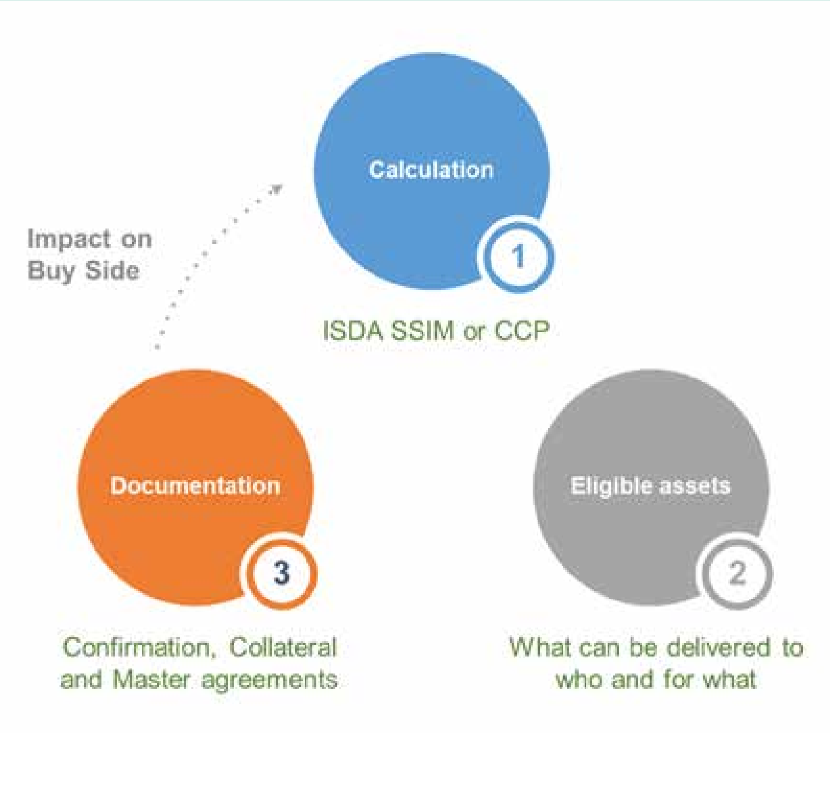
By way of explanation, Margining has two elements, Variation and Initial.

- Variation Margin, also known as the Mark to Market margin, is used to cover any potential losses due to market movement and can be called daily or even intra daily.
- Initial Margin, as the name suggests, is called at the outset of a transaction being posted. The IM is provided to create additional cover for the position the transaction impacts or creates. The cover could be for unforeseen operational issues, for large swings in the market between VM calls, or even, as in 2008, to cover for the swing in value of the collateral during the period from default to closure and settlement of the default positions.

The impact of the need for IM and VM calls and collateral cannot be underestimated for those firms in Phase 6. The main areas of impact will be in the calculation, choice of asset to provide and the documentation.

CALCULATION

For the first part, ISDA have provided a standardised model (SIIM).
Where the transaction is centrally cleared, the CCP will calculate and complete the settlement of the collateral movement automatically, the onus is then to pass that requirement to clients, using the calculation of the CCP. However, where the transaction is uncleared, the Sell side will usually define the IM aligned to a position. This will then be passed on to the clients to ensure the collateral given and received does not leave a gap in value. The net



collateral, from the IM and VM, should then be calculated and agreed with the counterpart before the delta collateral values can be confirmed and settled.

ELIGIBLE ASSETS

The assets to be delivered as Collateral will differ depending on the Counterpart (including the CCP), the type and asset of the derivative, as well as the form of margin. The pressure on having the right form of asset to provide as collateral could well drive a change in the assets offered and accepted as collateral. The USA already sees a wider range of asset provided that in Europe; even Mortgage Backed Securities are common in the USA, but not in Europe. I am not suggesting MBS be provided, but given the ever widening assets held by the Insurance firms, Pension Funds and Asset managers, the pressure will be on for alternate forms of collateral to be accepted. At the same time, each firm will need to determine what instrument(s) to provide based on the cost of not holding that instrument for the duration of the collateralisation. For example, the opportunity cost of giving a fixed income bond between Dividend dates is zero (providing it is recalled before the ex-dividend date); less than cash, where the interest would be realised on a daily basis. However it is cheaper to deliver cash than a bond due to the CSD transactional charge. In order to manage the collateral provided, constant monitoring of the opportunity cost of interest and CSD/custodian charges, along with the cost of transferring the instrument, is required.

$$K = \sqrt{\sum_{i,k} WS_{k,i}^2 + \sum_{i,k} \sum_{(j,l)\neq(i,k)} \varphi_{i,j}\rho_{k,l} WS_{k,i} WS_{l,}$$

Figure 2

DOCUMENTATION

The documentation required is potentially the biggest challenge in advance of the September deadline, the documentation being the transaction confirmation, the Collateral agreement and the Client Service Agreement (CSA).

The collateral details are embedded within the confirmation and must be sent to the counterparty and broker (if used) immediately after the transaction. The form of collateral to be used, the delivery and custody arrangements, the limitation of reuse of collateral, and other legal elements relating to the Margin requirement and collateral, are embedded within the Collateral agreement. The CSA, usually based on the ISDA master agreement, provides more general agreements such as default, netting and legal obligations.

The problem is that the form of confirmation, and the completely new section of the Collateral agreement to cover the IM, will need to be agreed with each counterpart. This may lead to adjustments in the Master Agreement to cover any specific points raised through the agreement of the first two documents. For an Asset manager, pension fund or insurance firm, that could become a very long process given the number of potential clients requiring these documents.

CONCLUSION

So, 2021 will be a quiet year for new regulation, but the tidying up and the UMR obligation will certainly keep us all busy.

Indeed, after 10 plus years of just keeping pace with regulatory demands, maybe 2021 is the ideal time to look at strategic changes to the operation, streamlining processes, including automation, reorganising the Operational risk, regulatory and compliance teams may also provide some efficiencies and redefinition of the three lines of defence.

The Nordics
What's next for this already highly electronic FX market?

We explore how the electronic trading market has been evolving across the Nordic region and what steps leading providers have been taking to meet growing demand for new technology and digital FX solutions.

The foreign exchange market in the Nordics region has established itself as a mainstay of European finance in the past 10 years. Data from the Bank for International Settlements shows that Norway, Sweden and Denmark have all become solid centers for daily activity of FX – hitting $30 billion, $37 billion and $63 billion respectively when the bank's triennial survey was last published in 2019. Finland is a smaller market by comparison, notching just $7 billion per day in volume.

The growth in Denmark has been particularly pronounced, hitting more than $100 billion in average daily volume in the three previous surveys dating back to 2010, while Norway has come up from just trading single figures in the 1990s. Sweden has also been a steady climber as the global daily number crashed through the $6 trillion figure in the most recent survey.

Their currencies are some of the most actively traded, too. The Danish krone accounts for $42 billion of the daily turnover, while the Swedish krona and Norwegian krone are responsible for more than $100 billion in average daily volume, above other popular currencies such as the Mexican peso and the Russian ruble. Finland adopted the euro in 2012.

HIGHLY ELECTRONIC MARKET

This steady growth has meant inevitable changes in how contracts from spot to derivatives products

"Digital services are increasingly taking care of the repetitive parts of this flow, and humans only control that the right rules are in place for the machines'"

Matti Honkanen

trade in the Nordics region. For some time now, FX trading in the Nordics has been highly electronic, which is a contrast compared to some other regions around the world.

Matti Honkanen, Head of Next Gen FX at Nordea, says the region is now experiencing a "second wave" of electrification.

"This means customers are streamlining the trading workflow by automating the manual tasks related to it. Traditionally, electronic trading has meant that customers manually figure out what to trade, type the trade specs in a digital interface and afterwards book them in other systems. Now the digital services are increasingly taking care of the repetitive parts of this flow, and humans only control that the right rules are in place for the machines," he says.

Much of this shift has come from the buy side, many of whom are demanding new tools and capabilities to manage the growing regulatory burdens and best practices that are being implemented globally.

For example, in Europe the introduction of the Markets in Financial Instruments Directive, or Mifid II, has presented asset managers with numerous challenges about how best to show they are executing in a way that meets new industry directives, while the FX Global Code – supported by many leading central banks and market participants – has forced a sea-change in the way professionals operate in FX.

"SEB was very active, alongside the Riksbank, in developing in the FX Global Code from start and we continue to be involved to this date through the GFXC. The Code's focus on ethics and sound business principles fits very well with our long-standing focus on ESG and we share this with large parts of the Nordic financial community, including many asset managers," says Svante Hedin, global head of FX and commodities at SEB.

The Swedish bank found the introduction of the Code also helped foster debate among clients around principles of last-look and other topics.

"SEB unequivocally does not and have not applied hold-time to last-look, and we think it is very important for the industry to drive even more transparency around such practices. The direct demand from this of course is largely in disclosures and in TCA tools. We continue to see more and more clients interested not just in algo execution TCA but also to rate their liquidity providers by market impact and other factors," says Carolina Trujillo, head of e-FX distribution at the bank.

INVESTMENT IN TECHNOLOGY

As a result of these new challenges for the buy side, banks have invested heavily to meet this demand, says Peter Bondesen, head of sales for the Nordics at BidFX, a leading cloud-based provider of electronic FX trading solutions that has many clients across the Nordic region.

"Many Nordic banks have invested heavily in their pricing technology which is another indicator of the volumes shifting towards electronic trading. Although a lot of clients still require services from FX salespeople, they also have a need to analyse their trading efficiencies, which is why we continue to see advancements in the TCA space. The most advanced clients want to own their own data to be able to utilize all the information historically," he says.

"The technology investments have also improved the Nordic banks' algo offering leading to the adoption of less liquid currency pairs which is another contributing factor behind the growth of electronic FX trading with these banks," he adds.

Bondesen has also started to see demand from across the Nordics for his firm's data and TCA offering as traders know they must increasingly be on top of these areas. There is a demand for transparent data, deep tick-by-tick data rather than top of book, especially as traders want to analyse market impact once they start trading. Often the tailored pricing data is then compared with a mid-market benchmark.

Other toolsets that are popular involve being able to set specific criteria on the platform in order to adhere to best execution policies, for example in relation to the number of liquidity providers pricing, or current spread versus a historical average.

"BidFX is investing in our data and TCA team to continue the development of our product suite. We are working on optimizing the timing of each execution based on our rich data sets. Ideally, an organization is using analytics to not only meet regulatory burdens, but to also serve as a feedback loop to improve execution." he says.

The company also sees an increase in the demand for API solutions, which shows a shift away from manual trading to increased automation in FX trading. Large buy-side firms in the Nordics are also using their platform to access multiple ECNs and even route working orders to these venues to try to achieve cost savings.

COVID-19

The extent to which clients are now relying on technology to trade and manage FX risk was tested last year during the height of the Covid-19 crisis. Most of the market was caught off guard and there is some evidence indicating the FX markets were less efficient during the spring of 2020 compared to previous quarters. The buy side has broadly adopted the use of FX algos, but in times of increased volatility, they would tend to favour risk transfer prices with their most trusted providers.

However, during the height of Covid-19, this did not happen and the ratio of algo vs risk transfer remained high. Market makers are automatically pricing also bigger tickets and 3 out of 5 trades over $10 Million were executed using algos, according to Lars Wiberg, Product Manager, FX Solutions at Itiviti, a leading provider of connectivity, trading and compliance solutions which is headquartered in Stockholm.

Nordic bank providers were early adopters of mobile technology

"The lockdowns and working remotely could be a factor, but it is probably safe to say that algorithmic trading and automated pricing are here to stay," says Wiberg.

The extent to which algorithmic trading is coming into a wider range of products in FX is also playing out in the Nordics. Wiberg notes that up until recently, algorithmic trading was concentrated in FX Spot, but there is an increased use of algos also in instruments with mainly RFQ-type workflows, like forwards and swaps. There are also more examples of predictive data being implemented into workflows and alert systems that will help the buy-side by reducing the need to constantly monitor the algo and also act opportunistically should a market event happen. "With further market fragmentation taking place, algorithmic execution will be an essential tool to manage the execution routes available and the digital transformation is definitely going to continue being an important theme going forward," says Wiberg.

Lars Wiberg

"With further market fragmentation taking place, algorithmic execution will be an essential tool to manage the execution routes available..."

EVOLVING CUSTOMER NEEDS

To meet evolving demand for FX e-commerce toolsets from customers, Nordic banks have been busy readying capabilities to tap into what their clients want.

For example, Nordea has had a mobile trading service available for some time, but it has spent most of its energy on improving other toolsets.

"Our new FX solutions have focused on exactly this. Typically it is the pre- and post-trade activities that are most time-consuming. So it is natural that the we see improvements especially there. We can see that it is changing the

"We continue to see more and more clients interested not just in algo execution TCA but also to rate their liquidity providers by market impact and other factors." Carolina Trujillo

"We are in general moving towards real-time payments and looking further ahead, cross-border real-time including FX." Svante Hedin

customers' expectations and demands; they are not anymore content with a platform that requires a lot of work from the user to do the pre- and post-trade activities manually on their own," says Honkanen.

Nordea has recently launched a set of automated FX solutions under the award-winning AutoFX umbrella ranging from automated forecasting and liquidity management to rule-based trading and hedging. The solutions are designed to deal with number of problems and inefficiencies associated with the traditional FX processes as well as giving companies tools and insights for strategic decision making. "FX trading has for a long time been a field where everything is digital, but still manual. This is changing now. Our AutoFX solutions will take care of this manual number crunching not only during trading but also during pre and post-trading. We have either developed our own tools or partnered with the best players in the industry to ensure that we have an automated solution available for each customer need." says Honkanen.

Digital applications are a major growth area in the Nordic region for SEB, too. On the retail side, Nordic bank providers were early adopters of mobile technology and have been innovative in bridging mobile digital solutions with the traditional, for example through OCR-scanning of paper invoices by using the camera on the phone/tablet.

"Institutional wholesale markets have been a little bit slower to move onto mobile platforms. We are in general moving towards real-time payments and looking further ahead, cross-border real-time including FX. We are paying close attention to that area of growth and are in many discussions with clients and third parties on these topics," says Hedin.

"Working together with clients is always a preferred alternative for us so we explore a lot of the possibilities together with them to make sure the offering is really appropriate for their needs," says Trujillo.

LOOKING TO ADD VALUE

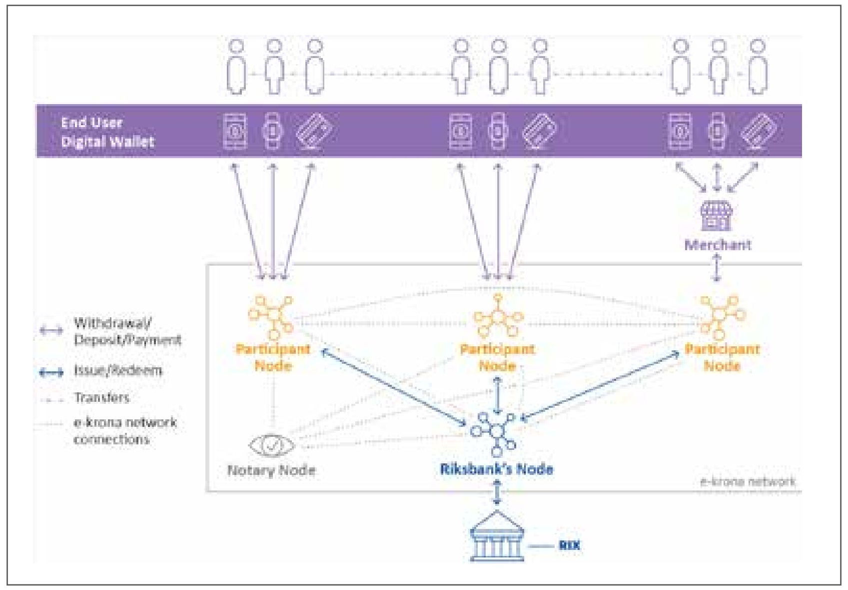
Much of the industry focus is on trading at the point of execution while also acknowledging broader contentions in liquidity, credit, and pre- and post-trade transaction cost analysis. While clearly those are important topics, particularly in markets such as the Nordics, another area of focus for SEB has been the notion of what led to the transaction in the first place.

Concurrently, the sell-side is often strong on technology, connectivity and has assets in large amounts of proprietary data. They have strong competence in risk management and analytics. So the larger question Nordic banks have been grappling with is how to wrap this up into services that truly add value in other parts of the clients' process flow – be that a corporate treasurer in a large industrial company struggling with their forecasting, or a financial institution making hedging decisions.

"To that end we are putting a lot of effort on a seamless API offering across product areas, and also analytical and modelling tools that deepens the dialogue between our staff and their client contacts," says Trujillo.

The distribution capabilities that SEB has is also key when deploying an FX algo offering for example. The key value proposition of its algos is access to the bank's internal pool of liquidity, and the ability to cross match with other client flow ranging across global institutions and Nordic retail.

"Our reach is unique and second to none when it comes to Scandies. This is really what makes a difference for our clients and they are so pleased with the execution that this is where our focus lies. The enhancements have been focusing a lot on this area, both in terms of the execution itself and in terms of making that very clear in the TCA reports," says Hedin.



Source: Accenture

Conceptual architecture for the e-krona pilot

At BidFX, the trading platform has a unique view into Nordic banks' capabilities. In general, Nordic providers who price into BidFX have very advanced technology that has been configured to match the firm's advanced clients' workflow and pricing requirements. Other providers see pricing based on the industry standard tiered levels, but newer pricing solutions like BidFX offer tailored pricing for each client. Globally, BidFX is experiencing a high demand in streaming prices for forwards, swaps, options and NDFs (even broken dates). "The Nordic banks know their strengths and tend to compete in the local pairs more than anything, and the innovations we expect are streaming rates on all dates resulting in a lower ratio of RFQs compared to hitting streaming rates." says Bondesen.

Peter Bondesen

"The most advanced clients want to own their own data to be able to utilize all the information historically,"

BidFX also sees banks knowing the local flow in fixed income and money market instruments with derived FX flow coming from these trades. The Nordic banks have specific knowledge pertaining to their local currency which allows them to skew prices efficiently. Building better electronic solutions has allowed clients to tap into this pool of knowledge while trading in their name, which allows trading on ECNs and the primaries.

"Deeper liquidity combined with advanced tools to access this liquidity efficiently means that the value proposition justifies the fees charged," says Bondesen.

OPTIONS

Some of the more promising areas of electronic trading growth in new products is the options market. For the moment, Nordea has been focused on more basic products, for the simple reason that there the customer base is larger, and the digitalisation is easier to implement. But that will be the logical next step, says Lars Henriksen, FX algo trading at Nordea.

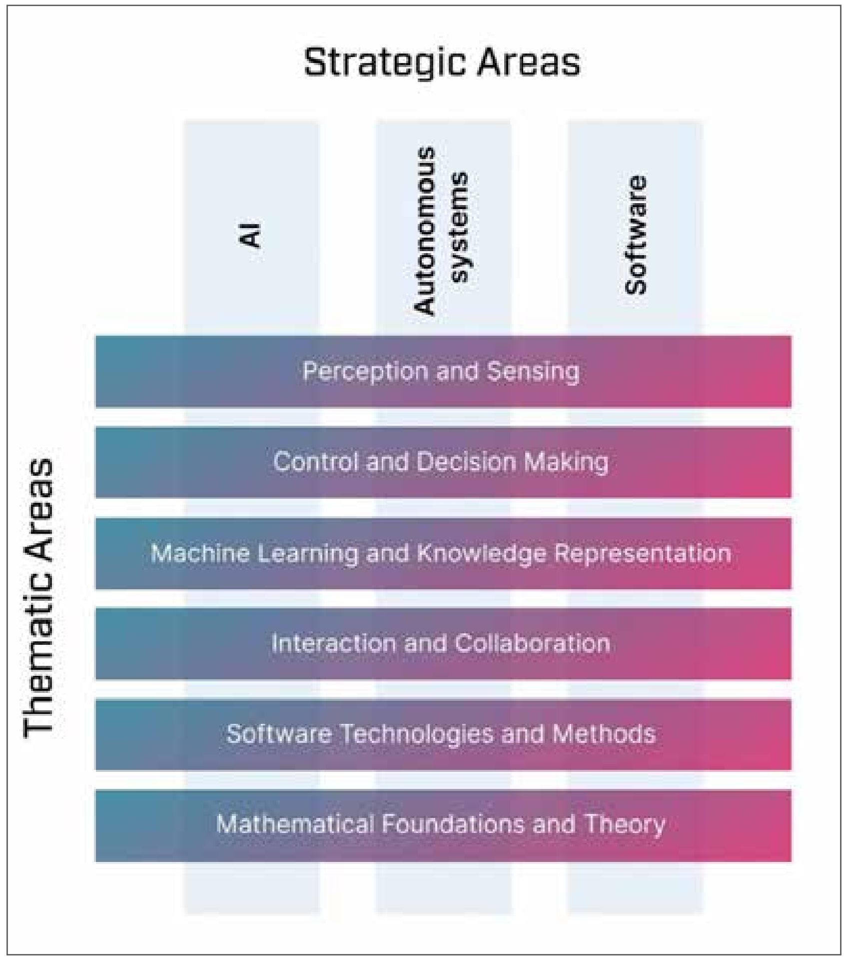
"It is obvious that we need to look more at the electronic option trading. The fact is that customers would like to have more and more digital trading possibilities across the board," he says.

At SEB, electronic distribution and communication tools are just as powerful in FX options as they are in other FX subproducts.

'We will quite happily price up an option electronically, and that can bring many efficiencies to both side of the trade with respect to STP booking etc. However, the uptake has been relatively slow and the fully electronic flow still constitutes a relatively small part of the total," says Trujillo.

NEXT GENERATION TECHNOLOGY

Advancements in FX are not just limited to electronic trading either, but use of new technologies such as blockchain, artificial intelligence and machine learning.



WASP is an example of a Nordic based technology focused research initiative that could have an impact on FX trading

Nordic banks have several research-oriented projects where new technologies are an important component. One area of investigation targets state-backed electronic currencies (CBDC – Central Bank Digital Currencies) like the E-krona, and the effects such developments could have on FX markets.

Banks are increasingly partnering up with other financial technology firms, as in the fast-developing world no one can take care of all the customer needs on their own, according to Honkanen.

"The use of Machine Learning (ML) and Blockchain technologies have been quite limited, apart from the execution algos, but we are all the time increasing the use of ML in many places. That's why we have also a dedicated data analysts in our small development team," says Honkanen.

At SEB, they have been partnering with universities to integrate advanced mathematics in the improvement and automation of their clients' processes. Another area that SEB is exploring is the use of machine learning to improve products and services. One such project is a joint research case between SEB and KTH supported by the Wallenberg AI, Autonomous systems and software program (WASP). One aspect of the project aims at improving trade execution in FX using reinforcement learning, and other promising areas of application are also under consideration.

FUTURE TRENDS

As an inevitable consequence of the electronification, coupled with further fragmentation, Lars Wiberg at Itiviti believes the FX market, including the Nordic region, will likely see a substantially increased spend on technology and market data. The company thinks full service vendors coupled with niche players, like providers of Market Data and analytics, will definitely see a lot of investments coming their way in the next 3-5 years.

Looking specifically at order management, the provider sees banks and brokers using systems developed specifically for FX, either in-house or by a specialised vendor. FX has been separated from other asset classes mainly because of the interaction between the client and the bank and the OTC nature of the business. Given few orders are executed on a pure agency basis, an ideal technical solution should integrate well with internal matching, risk management and hedging tools.

"To help solve these and other issues, many financial institutions are opting for a component-based technology provider. They may be looking for a matching engine which would allow them to apply their own pricing logic, or they may want to implement customised business logic directly in the FIX layer without making the ROE unnecessarily complex for clients who want to trade with them," says Wiberg.

"Using a vendor with extendable logic and the option to develop bespoke functionality will enable institutions to scale down on workflows that are not required, while offering flexibility to customise the ones that are."

Wiberg believes the market will most likely see further integration of OMS/EMS, just like in the equity space and an extended use of Smart Order Routing based not only on price, but on quality parameters like fill ratios, adverse market moves, latency, complete with full audit trails and pre and post-trade transparency.

THE E-FOREX INTERVIEW

Swissquote

Seeking to be the world's most pioneering and intuitive online bank

Marc Bürki

Swissquote Group Holding Ltd is Switzerland's leading provider of online financial and trading services. Listed on the SIX Swiss Exchange the Swissquote Group has its headquarters in Gland (VD) and offices in Zürich, Bern, London, Luxembourg, Malta, Dubai, Singapore and Hong Kong. The Group currently employs 722 staff. Swissquote Bank Europe is a subsidiary of Swissquote Group and by enabling private investors to access real-time prices free of charge it has followed the firms mission of "democratising banking" by offering transparency, integrity and unbiased information for the benefit of its clients and allowing them to make independent decisions. E-Forex spoke to Marc Bürki, Chief Executive Officer of both Swissquote Group Holding Ltd and Swissquote Bank Ltd to discover more about this highly innovative and forward thinking institution.

Marc, please tell us a little about the Swissquote story and how and when the company came to be set up?

It's a long story. It all started in a garage in the early nineties with my fellow graduate from the Federal Institute of Technology (EPFL) in Lausanne and friend, Paolo Buzzi. Our first business was to distribute financial information on pagers, these devices that people had attached to their belt, with a tiny 20 digit screen. Then our company, Marvel Communications, launched the Swissquote platform in 1996, it was about sharing financial information from around the world to Swiss clients. The success of that website was such that we naturally went on with the next steps: offer trading services, become a bank, go public etc. Sounds like a fairy tale nowadays but we had our ups and downs along the way. And we are both still here 30 years after.

Please remind us about the scope and range of your current product and service offerings.

I believe that on the latest count, we had over 3.5 million tradable products on our platform, so would need a few years to name them all. More seriously, the range goes from equities, fixed income, investment bonds, derivatives to eForex and all its instruments, we also offer our in-house robo-advisor, developed with our Quantitative Asset Management team, and 4 years ago, we added cryptocurrencies to our offering. Needless to say that the basics are also part of our offering: credit cards, standard bank accounts and custody services.

Why are increasing numbers of investors looking at Swissquote as a One Stop Shop for their professional trading requirements and in what ways are the banks' values critical to its ongoing success?

The product range mentioned above speaks for itself. But most importantly, people know who we are. And we don't pretend to be anything else. We give access to a range of products which is unique in terms of numbers and variety. We have a commission based business model so we only depend on the revenue generated by our investors. With that in mind, we are continuously seeking to enhance the service, increase the product range and create the best possible trading experience to our clients. The fact that we don't offer any wealth management as the traditional banks do, positions us as a "neutral" actor. All this has created trust and loyalty with our clients. We have become everyone's second bank.

What advantages does being a regulated Swiss bank provide to Swissquote in the highly competitive financial trading market?

For sure it means that the standards in terms of supervision and regulation are among the highest in the world. We have learned to work with it and spread that "swiss" spirit and standard to all our sister companies and subsidiaries. And, as a pioneer in the Swiss market, it happens that our relationship with our regulator

Swissquote gives access to a range of products which is unique in terms of numbers and variety

Swissquote Headquarters in Gland

becomes a collaborative one. I must say that abroad, our "Swissness" still is synonymous of trust, solidity, seriousness, so in that sense, it definitely helps our business.

Please remind us about the make up of your institutional customer base and the different client sectors that you now cater for?

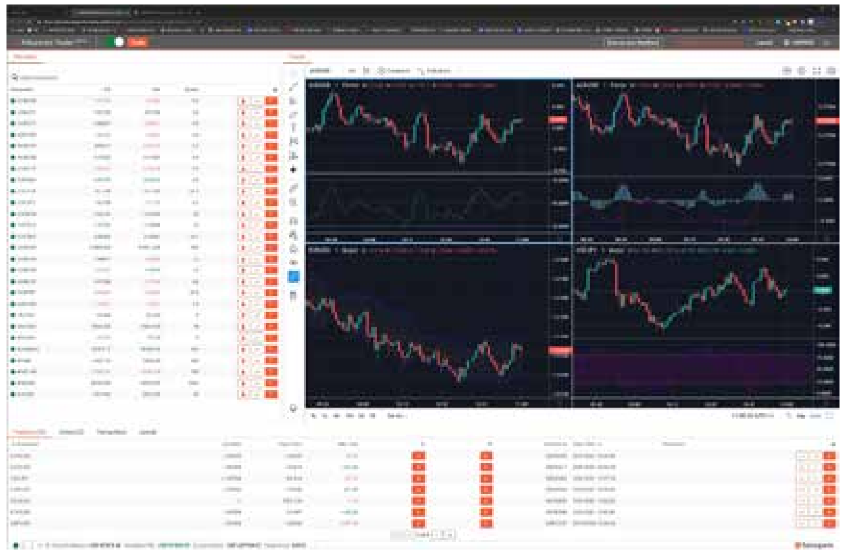
Historically, our first type of institutional partners were the Asset/wealth managers. From almost the start of Swissquote Bank, we developed our AM platform to let Asset Managers operate directly, pass group orders, manage multiple profile of clients, etc. Then we entered the White Label business, focused on the eFX at the beginning then extended it to our entire offering. Finally, we now offer global custody services to mid-size appropriately regulated banks and brokers around the world.

Swissquote has established strong relationships with hundreds of financial institutions. So how are your services helping them to reduce their operational and trading costs while increasing trading volumes and revenue?

It's quite simple: they know our costs, they know our level of service, they know what they can and can't do with us, and they get to know the team that will take care of them. Our offering is transparent from the very beginning, so they make their calculations and decide. We tell them on which aspects we are very competitive, and others where our costs might be higher than what they would find elsewhere. Transparency is the key in this type of

Swissquote's people are the banks strongest asset and it takes care of them

Swissquote - Seeking to be the world's most pioneering and intuitive online bank



Swissquote offers highly secure and high performing platforms to provide clients with direct access to the markets

business relationship, it's the pillar on which you build trust for the whole life of the partnership.

Swissquote is considered a pioneer in digital wealth management. How have you built on the services you offer in this space since you entered it in 2010?

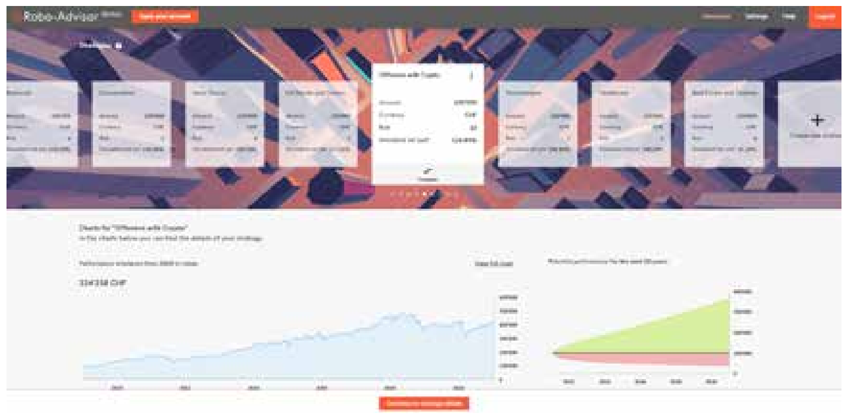
Definitely. Algorithms have been enhanced, the investment universe of our robo-advisor has been widened and diversified, and the user interface has been improved to make the client experience the best possible one. On top of that, our robo-advisor is available in a white label format and also for asset managers. It's an endless work in progress.

In 2017, Swissquote became the first bank to offer five cryptocurrencies. How important are digital assets becoming as part of your product portfolio?

We see digital assets as an increasingly important component of the Swissquote portfolio. The world is becoming more digitised in all aspects, as too are the financial markets. Crypto-assets allow for safe, transparent and cheaper ways of transacting and investing in a more democratised way. Naturally the increasing interest and development in this space will drive more trading of digital assets on the Swissquote platform.

Do you expect to see increasing institutional investor engagement with the digital currency marketplace over the next few years and what might accelerate this further?

Institutional investors are already trading crypto-assets. Smaller, more nimble institutions have been trading in this space for a few years, and many larger institutions have conducted studies and PoC's (Proof of Concept's) to understand how they can use these assets for trading and investing, as well as process improvement. There are now a few early adopter larger institutions trading digital assets and we'll likely see a lot of new institutions appearing by the week as the market becomes easier to invest in due to more availability of infrastructure, clearer regulations, and a larger market capitalisation.



The investment universe of Swissquote's Robo Advisor has been widened and diversified

How has Swissquote leveraged technology as a strategic differentiator in electronic trading services which has enabled you to pull away and keep you ahead of many competitors?

Our DNA is technology. Since the very beginning 30 years ago. I guess it helps to have two founders that are engineers, graduates from the EPFL helps in that sense. The philosophy since the creation of Swissquote is to empower investors. And the only way to do that is to offer them the best technology available.

How important is an investment in R&D to Swissquote and in what ways does the bank look to engage with clients to help shape your product offerings?

R&D is at the heart of our business. And obviously innovation. People don't always understand, even within the Bank, why we invest so much in R&D on a yearly basis, but it's the only way to stay ahead of the game. And client feedback is part and parcel of our innovations, listening to our clients suggestions, ideas and involve them in pre-launches has been in our processes for years.

Swissquote recently inaugurated its Singapore subsidiary

How involved has Swissquote been with industry initiatives that are trying to investigate and set standards for the application of new technologies like Blockchain across the capital markets?

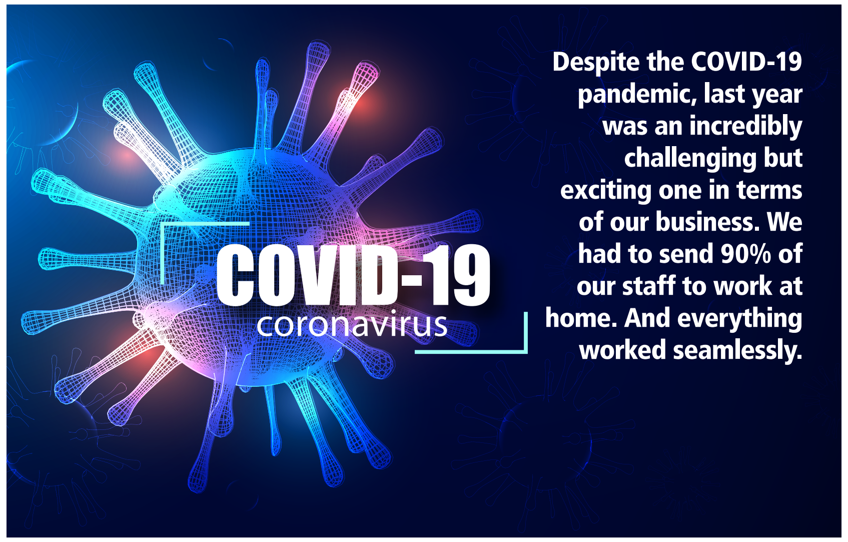
Swissquote play an active role in the CMTA (Capital Markets & Technology Association). In a recent experiment between several Swiss banks, the Swissquote trading platform was used to move digital securities across the blockchain between banks through execution on the Swissquote platform. This test proved that decentralized capital markets infrastructure is ready and operational within Switzerland for the issuance and trading of digital securities.

What role do you expect the Asian market to play in Swissquote's growth strategy over the next few years and what steps have you taken to increase your footprint across the region?

The Asian market is absolutely key in our growth strategy. Our Manchester United sponsorship, signed back in 2015 and still on-going, was built to grow the brand awareness in that fastly developing side of the world. Revenues have doubled over these last five years. For almost a decade now, we have a presence in Hong Kong, with

Digital assets are an increasingly important component of the Swissquote portfolio

Swissquote - Seeking to be the world's most pioneering and intuitive online bank



specialists on the eFX side. And more recently, we inaugurated our Singapore subsidiary that will be in charge of the more traditional part of the business and focus on institutional partners from the Far East. It's definitely a region where we want and need to grow in.

In 2019 Swissquote acquired the Luxembourg-based Internaxx Bank S.A. What benefits has that brought and how has it strengthened your position particularly in the institutional space?

It has strengthened our position in Europe. Definitely. With growing constraints and regulations, we had to offer an alternative to our European investors. Internaxx shared the same DNA as Swissquote. It was an obvious choice for us. And the Luxembourg regulator is equivalent to the Swiss one, so it was a perfect match for both entities.

What are your priorities and ambitions for growing the institutional side of your business still further in the near to medium term?

There are incredible opportunities in the institutional space. We can offer so many smart solutions to small and medium size banks and brokers that can cut significantly their operational costs and multiply their offering that we are just at the beginning of our development in that space. We started a few years ago targeting specific countries and regions, but now, after gathering experience and feedback, we are ready to go global.

Swissquote has talked about wanting to be the world's most pioneering and intuitive online bank. What does it take to achieve that?

A mindset. The will, the desire that tomorrow we will be better than today. Relentlessly wanting to improve. And focusing on client experience, which is at the heart of all our philosophy. They, our clients, are the ones who will decide at the end if we are a pioneering and intuitive online bank.

Last month Swissquote exceeded market expectations and posted a record year. How has the bank weathered the COVID-19 crisis and what lasting impact do you think it will have on our electronic FX trading marketplace?

It was an incredibly challenging but yet exciting year in terms of our business. From one day to the next, we had to send 90% of our staff to work at home. And everything worked seamlessly. That is when you realize that all these BCP (business continuity plans), and other back-up/fail-over plans have a reason and a meaning. I am not sure that the pandemic and its consequences, will change much of the eFX trading behaviour in the future, but for sure it will change the way the providers of such services must be prepared to face such challenging times.

We can offer so many smart solutions to small and medium size banks and brokers that can cut significantly their operational costs and multiply their offerings

The three AI/ML trends to watch in 2021

By Laura Sartenaer, Strategy and Partnerships Manager, EMEA, Refinitiv Labs

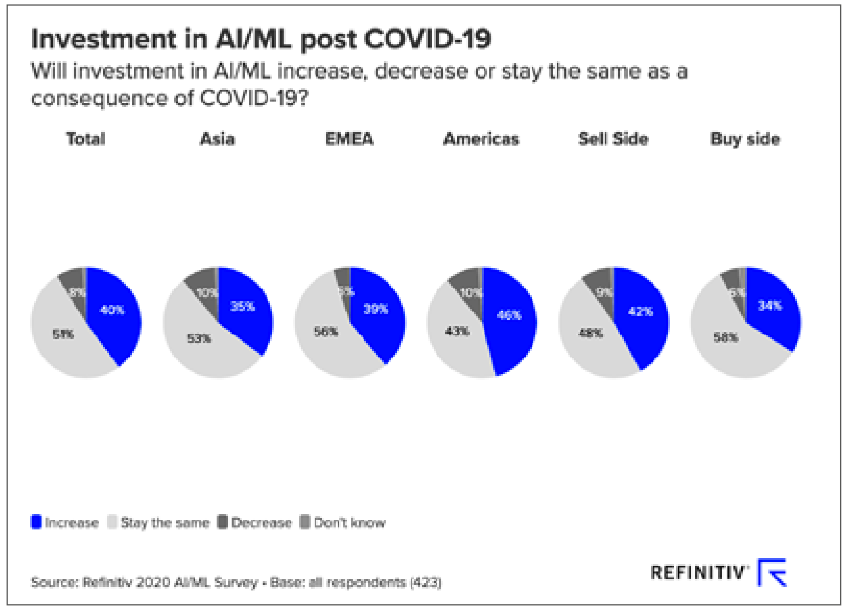
Laura Sartenaer

Artificial intelligence and machine learning (AI/ML) are becoming increasingly central to any business strategy and this trend has only accelerated since COVID-19. The key to gaining significant advantage over the competition is talent (data practitioners with financial domain knowledge), along with targeted investment and access to the best technology tools.

2021 follows unprecedented business change caused by the onset of the COVID-19 pandemic. Financial firms have had to rethink policies and processes, accelerate digital transformation, and adopt technologies that can drive growth in a rapidly changing environment. A tougher economic climate has meant that companies are turning to AI/ML for the promise of automation and efficiency gains. This has allowed companies to scale up massively and re-deploy human capital.

The potential of AI and ML has risen exponentially. Some firms see the challenges of change as an opportunity to increase investment and build for the future. Refinitiv's 2020 AI/ML report, The rise of the data scientist: Machine learning models for the future, shows that 40 percent of firms expect to increase investment in AI/ML as a result of COVID.

The three AI/ML trends to watch in 2021



As we move forward in 2021, three key AI/ML trends are emerging — AI/ML explainability, the rise of the data scientist, and the criticality of natural language processing (NLP).

TREND NUMBER 1: THE IMPERATIVE OF AI – EXPLAINABILITY

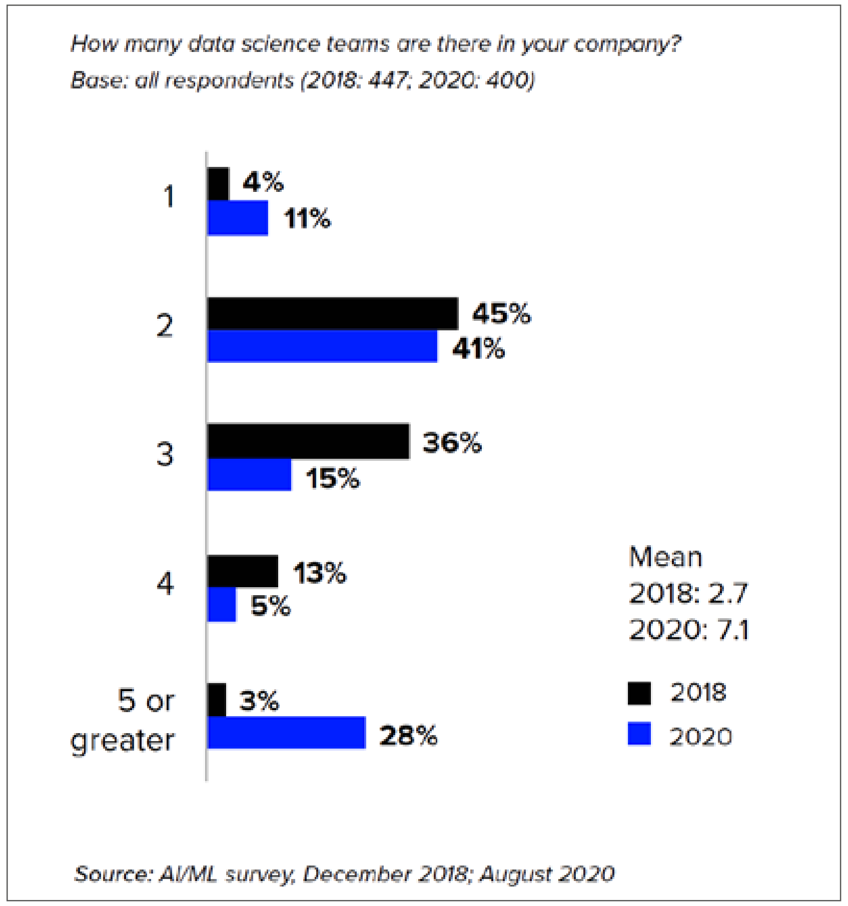
Explainable AI — tools and frameworks used to ensure that the results of machine learning models can be interpreted by humans — will be a considerable challenge in 2021. Increasing investment and greater use of deep learning — 75 percent of firms surveyed by Refinitiv are in production with the technology — raise the stakes, and regulators need to know how decisions are made. Machine models don't tend to provide explanations for their predictions. As models become more complex and consume larger and more diverse data sets, the challenges increase.

Leading AI practitioners are countering the challenges by building model governance teams, hiring linguistics specialists to interpret decisions, and deploying tools such as LIME (Local Interpretable Model-Agnostic Explanations) to explain AI/ML models. There is a trade-off between explainability and performance. Models whose predictions are totally transparent tend to be impoverished in their predictive capability, or are inflexible and computationally cumbersome. However, regulation favors the former. To improve the outcomes of AI/ML, Refinitiv Labs is working with MIT-IBM Watson Lab researchers to build solutions that can differentiate between causation and correlation. Today, narrow AI that performs specific tasks at a super-human rate struggles to differentiate between actions or states that appear in proximity (correlation), and actions that actually affect each other (causation).

The problem is addressed by applying causal inference to AI solutions. Causal inference is the process of drawing a conclusion about a causal connection based on the conditions of the occurrence of an effect. This creates more robust models and predictions, as well as higher-level causal reasoning and explainability.

TREND NUMBER 2: THE RISE OF THE DATA SCIENTIST

2020 was an undeniably difficult year, but a silver lining was that it helped provide a springboard for data practitioners. New roles were created in data engineering and data modelling; there was a surge in demand for specialists in data procurement, legal data rights, and AI/ML; and 'citizen data scientists' emerged in the business, using Python, the language of AI/ML, to speed up decision-making.



Number of data science teams per company

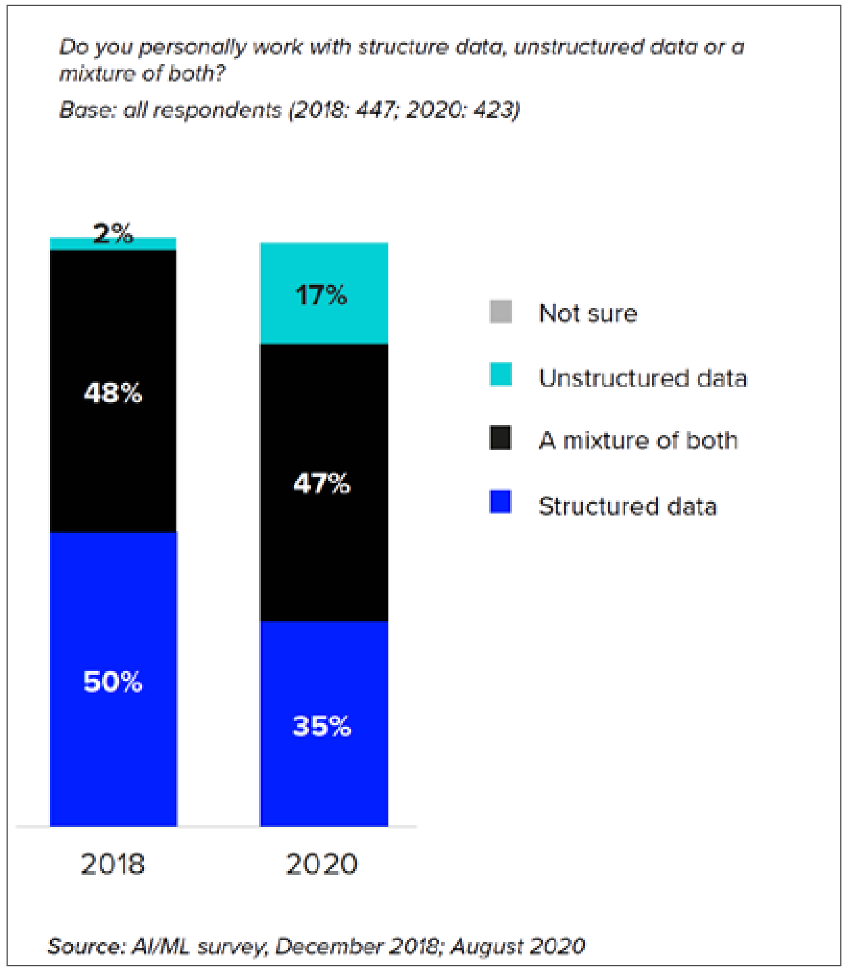
Highly skilled data scientists can translate business requirements into data science, identify new ways of operating, and create value that has the potential to provide a huge productivity boost for the economy. They use data science to help answer critical and complex business questions.

Refinitiv Labs, by way of example, responded to uncertainty caused by the pandemic with COVID-19 Company News Tracker, which uses AI/ML to process news stories and detect, classify and store any risks or opportunities mentioned. The resulting time-series signal allows firms to focus on material impacts as opposed to general news, saving valuable time and effort.

The need to hire data scientists with a strong understanding of statistics and domain knowledge is higher than ever. Refinitiv's 2020 survey shows the average number of data scientist roles per company increased by 17 over two years. The number of firms with teams of five or more data scientists rose to 28 percent.

TREND NUMBER 3: NLP SET TO TRANSFORM FINANCE

The perfect storm of exponential growth in data, increased compute power and advances in NLP technology and AI/ML model design are creating a meaningful opportunity for financial services firms. While structured data has been largely democratized over the past few years and is declining in value, unstructured data is booming as firms turn to NLP to unlock its value, increase efficiency, scale up massively and deliver a wealth of new signals to the business and revenue to the company. Refinitiv's 2020 AI/ML report highlights increased use of unstructured data with 17 percent of firms using only this type of data, up from just 2 percent two years ago.



Structured versus Unstructured data usage

The NLP story is a data story and, as a world-leading provider of data, Refinitiv is unsurprisingly approaching NLP in many guises. Examples include building NLP and AI/ ML into its content, like Machine Readable News, and leveraging NLP to improve internal operations.

Looking ahead, we see two exciting developments in the world of NLP.

The first is non-verbal communication. There is increasing investment (from a time and money perspective) into how machines can not only understand what we say, but also how we say it. This is particularly interesting given our move to virtual working environments and body language/facial expressions being more important than ever.

Separately, Refinitiv Labs is exploring the concept of providing customers with NLP models trained on our own data sets. This will allow our customers to train their models with ours and could dramatically improve performance.

Watch this space, because the word on the street is that words on Wall Street are what's going to give us the edge in 2021.

Refinitiv is part of LSEG (London Stock Exchange Group). More Refinitiv perspectives can be found at: https://www.refinitiv.com/perspectives/

Why credit over-allocation continues to plague prime brokers and how technology can help

Andy Coyne, CPO and co-founder of Cobalt provides a perspective on the current state of play in the prime brokerage market.

Andy Coyne

The problem of over-allocation in the FX market is not a new one but has been exacerbated by the move to electronic execution, Prime Brokerage and the related increase in volume and speed.

Credit is the lifeblood of execution but has always been an undervalued and poorly managed asset. It is core to every trading relationship and the key element that drives market access. It is essentially what FXPBs charge fees for. It goes without saying that credit providers need to remain in control of market access for their clients to ensure losses are not suffered and franchises not put at risk.

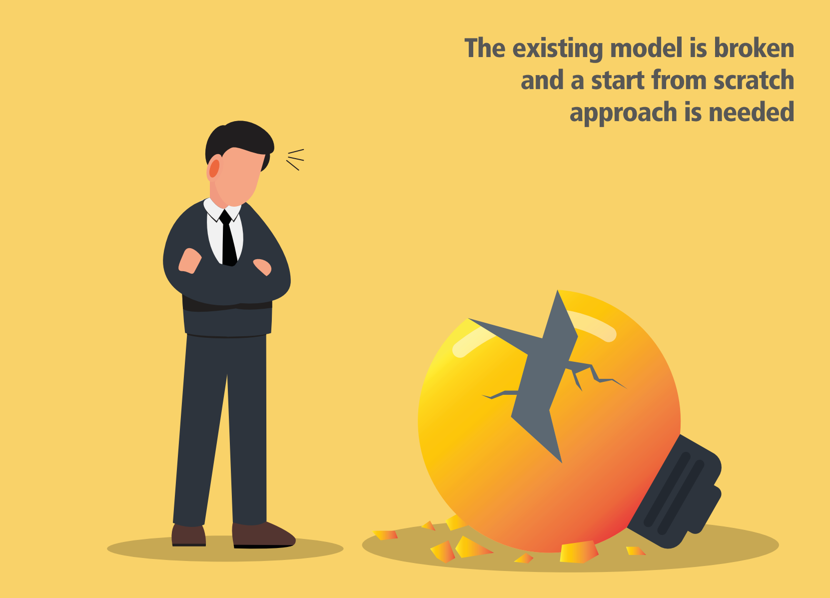
A lot of credit infrastructure was designed by way of quick solutions to solve specific problems but not much thought was given to the future. Market operators inadvertently layered on complexity for what is essentially a simple product. It is now expensive, impossible to manage and recognised as a systemic issue that regulators want resolving. They are particularly concerned with over-allocation. The key to solving this long-standing problem is by stating what everyone already knows; that the existing model is broken and a start from scratch approach is needed. To make it work, credit providers need to take control of the agenda by eliminating carve-outs and stating that there are only two limits that anyone really cares about, namely, the mutual limit on exposure derived from primary NOP and DSL.

Add to that, the concept of shared limits on a centralised infrastructure where all parties to a trade can see the same credit line and its utilisation. Today, every carve-out is risky because it only measures credit at the market endpoints. When using multiple endpoints, credit usage at each diverges, not just from each other but also the central limit. This is the case, not only for NOP / DSL carve-outs but also DNs which are a carve out with more restrictions and the potential for rejection.

SOLUTION ALREADY AVAILABLE

The truth is that the technology that solves this problem is already available. There has been a realisation by credit providers that they have a right to dictate how their credit is used and there needs to be a convergence on common methodologies that are applied. Credit providers want a single centralised service that can allocate credit to multiple endpoints simultaneously, without the need to log on to multiple venue UIs or even re-balance carve-outs between venues. Management time and legal overhead spent on limit and DN carve-outs is too much and unnecessary.

What has not been asked is why can venues handle multiple streaming



prices for execution but cannot handle streaming credit limits? Part of the problem is that ECNs are not incentivised to be good at credit management. Venues need credit but are not paid to consume and apply it. It also suits some venues to keep the barn door open and provide a simple kill switch. They are not responsible, however, for picking up the pieces from market disruption that can end with regulatory investigation and PBs leaving the market. Whilst kill switches serve a certain purpose, they tend to be a nuclear option that never ends well. What everyone requires is accuracy at the market access end points.

Credit providers have leverage that can make the market much safer. Firstly, they own the risk, so they can dictate the credit methodology and how it is deployed. They are also brokerage paying clients. So why has it taken so long? Since the financial crisis banks have been very much distracted and have been looking at their cost bases. Credit risk management is often incorrectly seen as an overhead rather than a means to reduce risk charges by being more efficient in using it as a means of protection. This new approach requires small changes to the technology stack at the ECNs to adopt a better credit model. The main trading venues are waiting for the primary credit providers to tell them what to do before acting on it. This requires a level of collaboration by the credit providers to push the market credit agenda.

Whilst kill switches serve a certain purpose they tend to be a nuclear option that never ends well

Some more nimble ECNs are already acting on this and see it as an advantage and a safer way to trade. They will be the first to go live with the new solution. Others may take time as their infrastructures often require greater change. For market operators, the time for action to resolve this long-standing issue is now.

FUTURE OF THE MARKET

Currently, most markets are developing differently and, in some cases, with better technology. Regulation like MiFID II applies the same rules across asset classes, so it no longer makes sense for firms to use different solutions in different markets as this can fragment their operations. Instead, they are better using technologies to create platforms or systems that work across their business, rather than one specific market.

As a first step, a market-wide adoption of a digitised, centralised middle and back office which creates a joint record of all FX trades, would make it possible for participants to submit regulatory filings far more easily, plus do so in a consistent format. This would enable better monitoring of any potential systemic risks, plus delivering lower regulatory costs for all concerned, including regulators. Central banks could send a strong message here by adopting a back-office infrastructure which creates a joint record for all FX trades, which would also serve as a clear signal to the organisations they regulate.

By its nature a digital ledger knows the interconnectedness of the market

An additional benefit is cost transparency. In the current environment, with the accumulation of multiple layers of legacy operations and credit technology and processes, it is often extremely difficult to determine the post-trade cost of a transaction. A central standardised process would not only be cheaper through sharing but by contrast make the measurement and monitoring of post-trade costs straightforward and potentially deliver the same degree of transparency as already available for FX execution costs.

Establishing a joint record that is scalable secure and fast, would also deliver various credit management benefits. For instance, the availability of near real-time credit data would enable more efficient credit processes, such as preventing erroneous credit cut-offs. This would improve client relations, making more efficient use of available lines, avoiding over-commitment risks and alleviating balance sheet pressure. By its nature a digital ledger knows the interconnectedness of the market.

Centralising credit management using a central platform enables more dynamic control across all types of trading relationships. This will dispense with the need for over-allocation and rebalancing in order to accommodate localised management of credit within venues, plus allow for clients to unwind positions more effectively. Those issuing credit will also be taking control of it (as is the case in equity markets) and will therefore be able to recycle it back into the market in the most efficient manner (a key consideration for non-CLS currencies and non-CLS members). Ultimately this will result in venues receiving more business on best price.

In operational terms, workloads will also reduce when using this sort of solution, as less remediation will be required. Efficient credit management and automated processing will drive a reduction in failed trades, thereby also reducing the need for manual intervention and repair. It has been estimated that 43% of market participants expect to see greater levels of automation in both front-office and back-office processes to take place over the next year or two.

Adopting such a progressive approach to technology will open the door to a new wave of market players to enter the FX market – and make unnecessary cost, risk and duplication a relic of the past.

Future proofing your FX network connectivity needs

By Matthew Lempriere, Head of UK, Middle East & Asia Pacific, BSO

Matthew Lempriere

If there is one lesson to be learned from the unprecedented events of 2020, it is that we should always be prepared to expect the unexpected. This time last year, for example, who could have predicted the global shift to home working – and trading – as a result of the global pandemic?

In the global FX markets, Covid-19 not only changed how and where people work, it also heightened market volatility and disrupted liquidity during 2020, highlighting the fact that the FX market is a constantly shifting and evolving ecosystem. The needs of market participants therefore - whether liquidity providers, intermediaries or end users in all their forms – are also constantly changing and never static. This is particularly the case when it comes to how and where firms access the markets.

ACCESS TO LIQUIDITY

One of the key aspects of FX is that it is a globally interconnected marketplace, arguably more so than any other asset class. This means that every market participant, from the largest tier one bank to the individual day trader, needs to ensure they have the appropriate network connectivity in place to access global liquidity centres under any current or future scenario.

From the perspective of the liquidity providers, this means being collocated in all the right data centres and having the fastest and most reliable network connections between them. Currently, the key liquidity centres for FX are located in London, New York and Tokyo. Increasingly however, major banks are installing FX matching engines in data centres in additional locations such as Singapore and Shanghai. Just recently for example, Barclays announced the deployment of a new FX trading and pricing engine in Singapore.[1]

Singapore is now the third largest FX trading centre in the world by turnover, according to BIS figures.[2] Much of this is due to the Monetary Authority of Singapore's (MAS) efforts to establish the city-state as a leading global FX centre. The regulator has created a number of incentives for liquidity providers to locate FX matching engines in the region. As a result, a number of tier one and two banks, including Standard Chartered, JP Morgan Chase, BNY Mellon, Citi, BNP and UBS, together with a growing community of non-bank FX liquidity providers such as XTX, as well as some of the biggest FX trading platform providers, have now built out pricing and trading engines in data centres such as Equinix's SG1 facility.

Latency between Singapore and other trading centres is also steadily being reduced, particularly as more direct connectivity is being introduced by leading financial network providers.

Another location of particular interest is Dubai. Like Singapore, Dubai has a forward-thinking regulator in the Dubai Financial Services Authority (DFSA), which has the remit to regulate FX trading in the Dubai International Financial Centre (DIFC). As a result of its initiatives to establish a regulatory environment of international standards, FX volumes in the region are not only growing but accelerating. The Dubai Gold and Commodities Exchange (DGCX) has contributed to this growth with the recent launch of its FX Rolling Futures contracts. With Dubai now firmly established as the Middle East & North Africa (MENA) hub for foreign exchange, firms are actively seeking the lowest latency connectivity between Dubai and other global financial centres.

All of this is leading to a growing trend of tier one and tier two banks building out infrastructure in new these trading centres, in order to provide local and regional customers with better price discovery and improved execution quality.

CLOUD CONNECTIVITY

For the banks themselves, having the lowest latency, highest availability network connectivity between all of these locations is of course essential. But what is becoming increasingly important for market intermediaries and their end customers is secure and reliable cloud connectivity, particularly as a growing number of trading firms are now accessing the markets via the cloud.

Many FX technology and liquidity aggregation platforms now offer cloud-hosted services in order to reduce the infrastructure requirements of end-user firms. This means high-performance connectivity to the cloud is becoming increasingly essential. Platform providers also need to be able to link their cloud-based offerings with collocated financial data centres in the primary FX market locations.

Another trend that is accelerating the need for cloud connectivity is the growing demand from end-user firms to access crypto markets alongside FX. Operators in the cryptocurrency space increasingly require both high speed and high reliability when providing customers with access to their markets via the cloud, and are turning to specialist low latency financial network and connectivity vendors to satisfy those needs. In December 2020 for example, CryptoStruct, the crypto infrastructure vendor, announced a partnership with BSO to develop a bespoke ultra-low latency cloud connectivity solution for their trading platform.[3]

While the cryptocurrency market is still only a fraction of the size of the global FX market, it continues to grow and is starting to see increased institutional activity, particularly as more and more crypto market operators are now putting in place institutional-grade infrastructure by hosting their matching engines in well-established financial data centres. Once again, this emphasises the need for secure, reliable and high-speed connectivity to both the cloud and existing electronic trading venues.

CONCLUSION

As the global FX markets adapt and evolve to an ever-changing world, network connectivity becomes ever more important. Firms therefore need to ensure they work with connectivity partners that can provide the lowest latency between well-established and growth liquidity centres, cloud connectivity integrated with a dedicated financial network, and access to new trading platforms, not just for FX and other traditional asset classes such as equities and derivatives, but also for crypto, an area of increasing interest to FX traders. By working with such technology partners, firms can ensure they are future- proofing all their FX network connectivity needs.

[1] https://home.barclays/news/press-releases/2020/09/Barclays-expands-FX-footprint-in-Singapore/
[2] https://www.bis.org/statistics/rpfx19_fx.pdf
[3] https://www.bsonetwork.com/bso-develops-bespoke-ultra-low-latency-cloud-connectivity-solution-for-cryptostructs-cryptocurrency-trading-platform/

Jumping the Crypto-Chasm: How Can Institutional Trading Firms Offer Digital Assets?

By Andy Flury, Founder and CEO of AlgoTrader

Andy Flury

What seemed highly unlikely a few years ago is now taken for granted: an increasing number of institutional players are looking to offer digital asset services to their clients. Recent high-profile examples include Goldman, JPMorgan and Citi, who are all reportedly exploring crypto custody services.

In the short term, with major cryptocurrencies like Bitcoin and Ethereum at or above historic highs in recent months, coupled with a low-yield macroeconomic outlook, digital assets have become an attractive alternative investment. 6 in 10 investors now believe that digital assets have a place in a portfolio according to the Fidelity Digital Asset Survey conducted last June, with respondents citing the perceived low correlation to traditional assets, innovative underlying technology, and high upside potential as the main appeals. An additional factor is that in the current economic climate of expansive monetary policy and inflation, digital assets are often cited as a hedge against potential devaluation of leading fiat currencies. Some financial institutions see this as an opportunity to broaden their client base by responding to a growing need and create a new source of revenue that to date, has been considered to be largely independent of traditional capital markets.

In the medium term, it is also a strategic move. Foundational digital asset services, such as cryptocurrency custody storage, trading and settlement, can be seen as the first step towards tokenized assets, which are likely to be a much larger market in the long run. In addition, the huge expansion of decentralized finance platforms, which have witnessed a 25-fold increase in locked-in assets over the past year according to tracking website DeFi Pulse, offer a glimpse of the type of services that traditional players may seek to emulate and integrate into regulated offerings over the next 5 years. Thus, a digital asset offering can be used to foster a reputation as an innovative player, and signal to the market that you are ready to take advantage of technology-driven shifts in the industry in future.

What are the key operational challenges for banks and financial institutions engaging in digital assets?

Despite the opportunity, however, financial institutions and banks currently face significant barriers to establishing digital asset offerings. Firstly, they need new and specialized infrastructure to manage transactions and ensure safe custody of digital assets. Security is of utmost importance to all players; especially to banks, who are generally seen as the traditional guardians of value. Such infrastructure can be time-consuming, costly and complex to develop in-house and requires specialized knowledge in cryptography and cryptosecurity.

Once the infrastructure is in place, the lack of smooth interoperability between the traditional and digital financial worlds poses another stumbling block. Liquidity in the digital asset space tends to be highly fragmented across a myriad of venues such as market makers, exchanges, brokers and OTC desks. In fact, an estimated 70% of digital asset liquidity is traded off-exchange. In addition, the industry still lacks a commonly agreed standard for exchanging financial information (something akin to FIX in the traditional asset space), which makes syncing data with core trading and banking systems a major technical challenge.

Beyond these infrastructural challenges, there is also a shortage of staff with expertise and knowledge about the underlying technologies. For example, a LinkedIn analysis last year found that blockchain was the most in-demand hard skill among employers on the site. Furthermore, as the market is relatively young and dynamic with many participants, choosing reliable partners and service providers can be difficult. Counterparty risk is a well-known source of concern even in more established markets and the risk that a contracting party might fail to fulfill their obligations is greater in a relatively immature market like digital assets.

Finally, regulatory compliance poses an additional challenge. While all transactions on blockchain networks like Bitcoin or Ethereum are public, the identities of the transacting parties are not. Instead, each party is represented by a hexadecimal code, which is a combination of letters and numbers known as a public key. As a result, financial institutions need to analyze transaction histories and perform coin checks to comply with Know Your Customer (KYC) and Anti-Money Laundering (AML) regulations, among others.

What features and functionality do quants look for in a digital asset trading platform?

As discussed above, the digital and traditional asset space have some fundamental differences in terms of the underlying architecture and regulation. However, when institutional traders choose a digital asset trading platform, they want to be able to access secondary markets for this new asset class with minimal disruption to their existing workflows.

Source: Fidelity Digital Assets

Current Exposure and Channels for Exposure
36% of institutional investors surveyed currently invest in digital assets.

Perception of Digital Assets
Almost 60% of all investors surveyed have a neutral or positive perception toward digital assets.

Appeal of Digital Assets
Almost 80% of investors find something appealing about digital assets. The most appealing characteristics are the lack of correlation with other asset classes, exposure to an innovative technology play and high potential upside.

Obstacles to Investment
The most common obstacles to digital asset adoption are price volatility, concerns around market manipulation and lack of fundamentals to gauge appropriate value.

Categorization of Digital Assets
More than 6 out of 10 investors feel digital assets have a place in portfolios. Almost 40% of investors believe digital assets belong in the alternative asset class. 20% of investors believe digital assets belong in an independent asset class.

Digital Asset Investment Products
More than 80% of investors indicated they would be interested in institutional investment products that hold digital assets.

Highlights from the Institutional Investors Digital Asset Survey 2020

In fact, the term "digital asset trading platform" is perhaps too narrow — traders simply want an order, position and execution management system that also offers connectivity to digital asset venues. This means that from the perspective of a professional trader there should be no difference between placing an order for a crypto asset like Bitcoin, and a traditional stock or bond. Moreover, manually managing multiple crypto wallets and keys, or querying individual venues on an ad hoc basis is simply not tenable for professional traders from both an operational and risk standpoint. Ideally, digital assets should be seamlessly integrated into established trading and custody systems and processes. Particularly for quantitative trading, this is important, because it means that crypto and digital assets are not siloed into a corner and can be incorporated into a broader trading strategy that also encompasses traditional assets.

As digital asset venues have not yet established common connectivity standards and protocols, one of the most important functions of a digital asset trading platform is to provide reliable connectivity to a wide array of venues. This is essential in order to have access to a deep liquidity pool across many exchanges to fill large orders without incurring significant slippage or the risk of front-running by other market participants. This is also where smart order routing and execution algorithms come into play. Although it might be taken for granted in the traditional asset space, it is worth remembering that the best quantitative strategy will be useless without reliable access to liquidity and the right execution algorithms to tap into that liquidity inconspicuously. A good digital asset trading platform thus acts as the connecting tissue between the traditional and digital world, enabling the user to reliably interact with many market makers, brokers, exchanges and OTC desks through a single FIX connection.

A growing number of digital asset trading systems are starting to provide tools to help ensure best execution. While this may not yet be a regulatory requirement for most crypto assets as it only legally applies to securities in most jurisdictions, it is seen as a way to introduce a familiar and trusted concept into digital asset trading in order to reassure clients that their assets are being managed efficiently. Smart order routing helps to improve execution quality by choosing the best route for each order across a complex maze of possible venues, while taking price, speed, liquidity and likelihood of execution into account. While pre-built execution algorithms can save time, some traders welcome the ability to access the underlying code and understand what is really going on. In order to make execution into a genuine unique selling proposition (USP), however, the option to deploy custom, proprietary execution algorithms is a must.

Finally, there is the coding environment. When developing any quantitative trading strategy, some computer programming knowledge is usually required. High-level languages such as Python, Java and R tend to be popular because they are comparatively easy to read, while the many pre-built "packages" of code enable quick deployment and parametrization of strategies. Traders will not want to reinvent the wheel here, so strategy development for any quant trading system should use a familiar language and logic. For back-testing strategies, access to good quality market information and signals is essential and this is another area where a digital asset platform can help by integrating connectivity to trustworthy data sources.

What are the infrastructure, connectivity, and security issues involved in a digital asset platform?

The first decision for any financial institution or bank when establishing a digital asset offering is whether to develop the core infrastructure in-house or to work with partners. While it may be tempting to develop end-to-end proprietary infrastructure in a bid to capture profit throughout the value chain, it is worth bearing in mind the complexity and cost of such an undertaking. There is now a vibrant secondary market ecosystem of firms offering white labelled digital asset services ranging from custody storage, trading, brokerage and execution, to asset tokenization. Therefore, for a financial institution making a first foray into the digital asset space, it is possible to get up and running without starting from scratch.

In terms of connectivity, as mentioned above, the paramount challenge is establishing reliable access to liquidity venues. Unlike the traditional asset space, there is no commonly accepted principal exchange for specific digital assets. A number of global and predominantly retail-oriented exchanges like FTX, Binance and Coinbase compete to gain the upper hand while local firms typically act as brokers, resulting in a highly fragmented landscape in terms of liquidity. In addition, each liquidity provider uses their own API implementation, based on protocols like REST and Websocket. As a result, different code will likely be needed to query the same information or perform the same transaction on two different venues. In order to ensure stable connectivity and convert the information into a standard FIX feed for institutional traders, the only solution is to integrate each API individually and constantly monitor, test and keep abreast of changes. Maintaining this connectivity can be a labyrinthine challenge, as the quality of technical documentation and support from venues is highly variable. This can be avoided, however, by using secondary-market services which provide access to a variety of liquidity providers through a single FIX-API.

Finally, security infrastructure is also an important consideration. When $280 million in assets were stolen from Hong Kong-based digital asset exchange KuCoin last September, it showed that although such large-scale hacks are on the decline, the threat remains. For long-term custody, so-called "cold storage" — where the private keys to digital assets are stored in a place that is isolated from any internet connection — is probably the safest choice. For trading purposes, however, this is obviously not an option as the assets need to be quickly accessible. As a result, some form of "hot" on-exchange or self-custodial, exchange-connected wallet will need to be used while implementing a range of cryptosecurity processes and techniques to minimize risk. Here again, there are a number of secondary market players who specialize in this field.

What are the important factors in choosing the right platform for your needs?

As discussed above, digital assets offer unique advantages and challenges to banks and financial institutions. Indeed, both the opportunity and challenge could be considered to be two sides of the same coin: digital assets are attractive in part because they are somewhat independent of traditional markets and have novel fundamentals, which is also what makes them tricky to integrate into an institutional product offering. However, a rich and vibrant secondary market now exists through which most, if not all, of these gaps can be filled. Thus, when establishing a digital asset platform, the precise mix of in-house and outsourced features will depend on a number of factors:

Scope of commitment: How much are you willing to invest upfront in infrastructure for core functionality? If you are planning to build your digital asset architecture in-house, it will take sustained investment over multiple years. If the move into digital assets is more of a pilot project to test demand, it is likely to be more efficient to use a white labelled solution from a third party for core functionality like custody and trading.

Existing positioning in the market: How do your customers perceive your role in the market? Are you regarded as a trailblazing innovator or a safe pair of hands? If the latter, you may want to begin with services like custody storage and expand into selected tokenized assets (such as real estate and luxury goods) in a few years. If the former, you might want to offer custody and trading as well as more complex products like spot trading and crypto derivatives straight away.

Competitive landscape: How many regulated players are offering digital assets in your jurisdiction? Is there a client segment that is currently underserved? While platforms offering retail clients access to crypto abound, digital asset offerings aimed at institutional players tend to be less prominent. The key here is to use your knowledge of specific client segments, including their pain points and workflow, to create a digital asset offering that adds value and can be adopted with ease.

Overall, the biggest advantages that financial institutions and banks have over the new crypto players are trust and market intelligence about how the landscape is likely to evolve as it matures. The sweet spot lies in creating digital asset offerings that are measured enough to be trusted, ambitious enough to be truly innovative, and tailored to the needs of a specific client segment.

Centroid Solutions:
A leading technology firm laser focused on Research, Innovation, and Risk Adjusted Performance

Centroid Solutions is a technology provider that combines real-time analytics, sophisticated risk-management, and advanced connectivity with extensive industry-knowledge to improve risk-adjusted performance and strengthen sustainability for brokers. We spoke with Cristian Vlasceanu the firms CEO to discover how it is differentiating itself in a highly competitive marketplace.

Cristian Vlasceanu

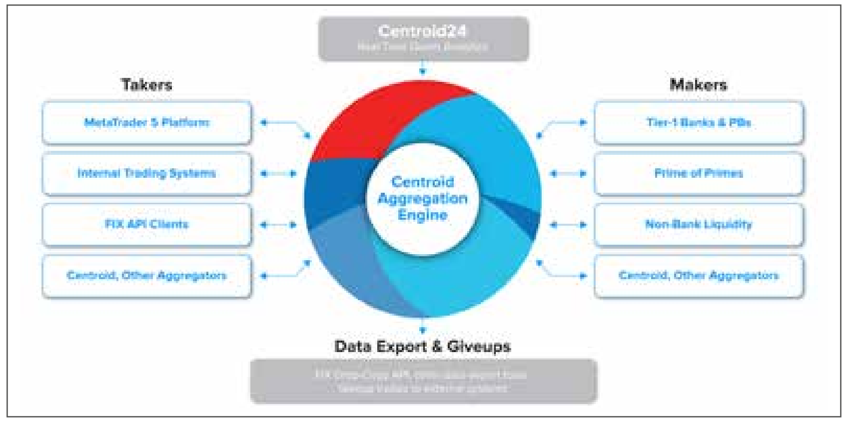
Please tell us a little about the full range of products and services that Centroid now offers.

Centroid Solutions is a technology company specializing in risk management, quantitative analytics, connectivity, execution and P&L optimization for Forex brokers. We are offering three solutions:

- Centroid24 Risk Management System – an all-in-one Business Intelligence Software, based on big-data technology. The system consolidates and analyses vast volumes of data from multiple trading platforms and bridges on real-time basis, completely eliminating manual work by automating complex risk management and analytical activities for the dealing room and executives of the company. It offers a convenient interface to monitor and analyze risk exposures, company P&L and all trading activities in real-time, based on data-driven intelligent technology from one centralized environment. It provides comprehensive risk management and analytical insights, risk alerts, complex simulations on trading data with forecasting capabilities, recommendations for actions, and decision-making business reports.

- Centroid Gateways Aggregation Engine – an institutional-grade connectivity, execution, and reporting system, backed by highly redundant low latency infrastructure in Equinix LD4, NY4 and TY3, with backup facilities and enterprise-level DDoS protection to ensure consistent, secured and reliable operations. The system connects to any number of LPs of your choice, MT4, MT5, other trading platforms and FIX API clients, to manage pricing, liquidity and execution from one centralized environment. It can also work together with Centroid24 RMS enabling advanced execution capabilities based on real-time quantitative risk analytics of the broker, which would automatically detect and STP individual toxic trades fully or partially, on-the-fly, at the point of execution.

- Centroid Connect Hosting Solutions – dedicated hosting solutions provisioned in the world's leading datacenters, specifically tailored for trading servers of Forex brokers. This ensures optimal operation with up-to-date market prices and low-latency towards execution engines and liquidity sources, as well as optimized connectivity between access points and trading servers, for high quality client services around the globe. An enterprise level DDoS protection system safeguards against attacks of any scale.



Centroid Gateways Aggregation System

Centroid24 Risk Management System

What types of trading firms are you providing services for and how geographically spread are they?

We are catering our products and services to financial firms operating with OTC products, such as: Forex, CFDs, Futures and Cryptos. Our customers are spread across the world and are using MT4, MT5, cTrader or FIX proprietary platforms.

What really differentiates Centroid from many of your competitors?

We are coming from a practical background. Our team is comprised of professionals with over 20 years of hands-on experience in dealing desks, risk management, quantitative risk analytics and trading solutions. We know how difficult it is for brokers to achieve high profitability on consistent basis under any market conditions, while maintaining loyal client-base and growing trading volumes at the same time.

The biggest challenge preventing brokers to achieve best results in all these efforts is actually coming from technological constrains of mainstream trading platforms and bridging technologies used by brokers today – the lack of comprehensive real-time risk management tools; the inability to construct execution rules based on real-time risk analytics of the broker; the lack of tools to optimize clients' trading flow from risk/revenue perspective at the point of execution.

Our competition is either focusing on producing risk management information only, often not in real-time, and most importantly, completely disconnected from the actual trade execution process (meaning that the information cannot be used to construct execution rules, which would automatically detect and mitigate risks in real-time at the point

Centroid Connect Hosting Solutions

Centroid's unique features

of trade execution); or either focusing entirely on trade execution only, but again, such solutions are completely disconnected from the actual risk management process of the broker (meaning that, such systems also cannot be used to construct intelligent execution rules). This creates a handicap situation for brokers on multiple levels:

- prevents brokers to maximize their risk-adjusted P&L results, because risks cannot be automatically detected and mitigated in real-time at the point of execution;
- causes business inefficiencies and higher overall operating costs;
- prevents brokers from providing a consistent pricing and execution quality for clients.

What makes Centroid unique is the fact that we offer a technology suite which help brokers to effectively overcome the above issues, by merging together real-time risk management and quantitative analytics, with the ability to construct sophisticated execution rules, which would automatically detect and mitigate risks, on-the-fly, at the point of execution.

In what ways can Centroid help brokers to optimize their business performance?

The main question is how to maximize net P&L results, without inflating systematic risks, operating expenses, and at the same time remain transparent and consistent in pricing and execution quality for clients regardless how they trade, under any market conditions. Maximizing P&L at all costs, without regard to systematic risks and without putting clients' interests first is extremely dangerous in volatile business environment and can eventually lead to the loss of trust and reputation for the broker. That is why, when we talk about performance, P&L results are an especially important factor, but not the only factor determining business sustainability and long-term success of a Forex broker.

Centroid Solutions offers a technology suite which allows to effectively manage and control all these business concerns in the most flexible way. Centroid24 RMS offers real-time tools to measure the systematic risk at the level of portfolio, asset class, instrument, currency with automatic hedging recommendations, to stay within desired risk limits under any market conditions. Monitor exposure across all books and company P&L at a portfolio and instrument level, with in-depth clients' risk profiling, trades analytics, flow classification, toxic flow detection, risk alerts and instant decision-making business reports. All these tools are absolutely essential for the practical needs of any Forex dealing department because they automate all risk management activities, providing real-time business intelligence about the risks involved. On top of that, our execution engine allows to manage and optimize clients' flow allocation between b-book and a-book at the level of each individual trade, effectively mitigating any kind of risks in real-time, at the point of trade execution, in a completely transparent way for the clients (without affecting pricing, execution quality, or the trade settings of the clients).

Research has always been important to Centroid. Why is that and what benefits does it bring to your clients?

We consider technology to be the most powerful tool to pursue improvements in risk management and execution. To that end, we rely on computing power to process continuous data on a real-time basis and we developed a proprietary simulation engine that enables us to back-test models prior to implementation. Our research objective is to find incremental improvements that contribute to the overall risk-adjusted performance of our clients. This helps achieves better asymmetrical risk/reward opportunities for our clients.'

What plans do you have for growing the footprint of the company this year in terms of launching new products and increasing global client coverage?

At Centroid we always stand by our mission to develop a research-based, cutting-edge technology to help financial institutions establish better risk visibility over trading operations. All our solutions are delivered bespoke and tailored to individual needs of each of our client. We constantly update our solutions based on the latest requirements and evolving needs of each of our client. During this year we have several new innovative projects in a development pipeline, which would open up new capabilities for our clients to achieve even better overall performance results.

Retail's revenge & how to level your brokerage up in 2021

By Evgeny Sorokin, SVP of Software Engineering at Devexperts

Evgeny Sorokin

Over the past year, plenty of column inches have been devoted to how the Covid crisis has been a boon to the retail trading industry. Registrations and volumes are up almost across the board, and it seems as though entirely new demographics are venturing out into the world's capital markets. Last July, Citadel announced retail had accounted for 25% of the US stock market's activity during the pandemic, up from just 10% the year before. On the FX front, GAIN Capital announced volumes in June that were up 60% year-over-year.

To some, this is just the natural result of increased volatility, attracting more traders to play the swings. To others, we're seeing the emergence of the long-awaited new generation of retail trader. While both are correct in their own ways, these explanations fail to account for how the unprecedented events of the past few years have also created the conditions for retail money to have a far larger say in markets.

If this is so, it's a crucial moment for brokerages flush with 2020's gains, to upgrade, evolve, and emerge as leaders in the new normal.

YOLO IN A TIME OF COVID

We're now 10 months removed from the Covid-crash that saw asset prices tanking in unison. US equities tumbled 35%, crude oil futures briefly went negative, even the supposedly uncorrelated crypto market experienced its biggest drawdown since the crash of 2018. Beyond the financial consequences, the pandemic turned the world upside down and changed the manner in which we do almost everything.

You'll recall that retail traders were touted as early catalysts of the "recovery trade." These were the foolhardy speculators signing up for zero commission accounts from their smartphones. They deposited their student loans and stimulus cheques en masse, and started scooping up shares in decimated companies like Hertz, J.C Penny and Carnival. Companies that had zero chance to perform on fundamentals in a world locked down. Or perennially shorted stocks like Blackberry, well past their prime and with their all-time highs more than a decade behind them. These retail traders led a broader recovery that surpassed the market highs pre-Covid, and has gone on to incredible excesses. More on these below.

THE UNDERESTIMATION OF THE RETAIL TRADER, IN TWO HEADLINES

Exhibit A:
On July 9, 2020, Business Insider published an article, quoted above, titled **Retail traders make up nearly 25% of the stock market following COVID-driven volatility, Citadel Securities says**. It discussed the boost in volumes by retail traders, but painted them as being along for the ride, taking advantage of zero commissions and a Federal Reserve backstopping risk assets to speculate during a pandemic when there's not much else happening.

The article quotes from a recent Bloomberg interview with Joe Mecane, Head of Execution Services at Citadel Securities, who outlines retail's increasing interest in trading options, while confirming that their influence in markets is growing, but not enough to "drive valuation or market levels."

Exhibit B:
Cut to article 2, again from Business Insider, six months later, on January 26, 2021. **GameStop short-seller down 30% this year gets $2.8 billion bailout from the firms of billionaire investors Steve Cohen and Ken Griffin**. The firms in question are none other than Point 72 and Citadel, which are now bailing out a fellow hedge fund (Melvin Capital Management) that's been brought to its knees by a retail-led short squeeze in one of those aforementioned heavily shorted

stocks. To make things even juicier, Citadel was one of the market makers that caused the stock to shoot up through its own hedging activities. The instrument of choice for this retail-led crowd attack was the very options Joe Mecane was referencing in the July 9 article. By purchasing wildly out-of-the-money call options on GameStop stock, these retail traders initiated a "gamma squeeze," in which the market maker had to hedge by purchasing the underlying stock. This, in turn, drove up the price, putting existing short positions under water, the owners of which were also forced to purchase the stock in order to cover their shorts or to close them entirely (which sent the stock even higher).

To put it all into context, GameStop stock is currently up around 700% over the past 10 days. It's up around 1800% since the New Year and around 14,000% since last April's lows. At the time of writing, the ability to buy the stock has been halted by some brokerages citing clearing problems. It's even been rumoured that the White House has had to have a word. Still think retail doesn't move markets?

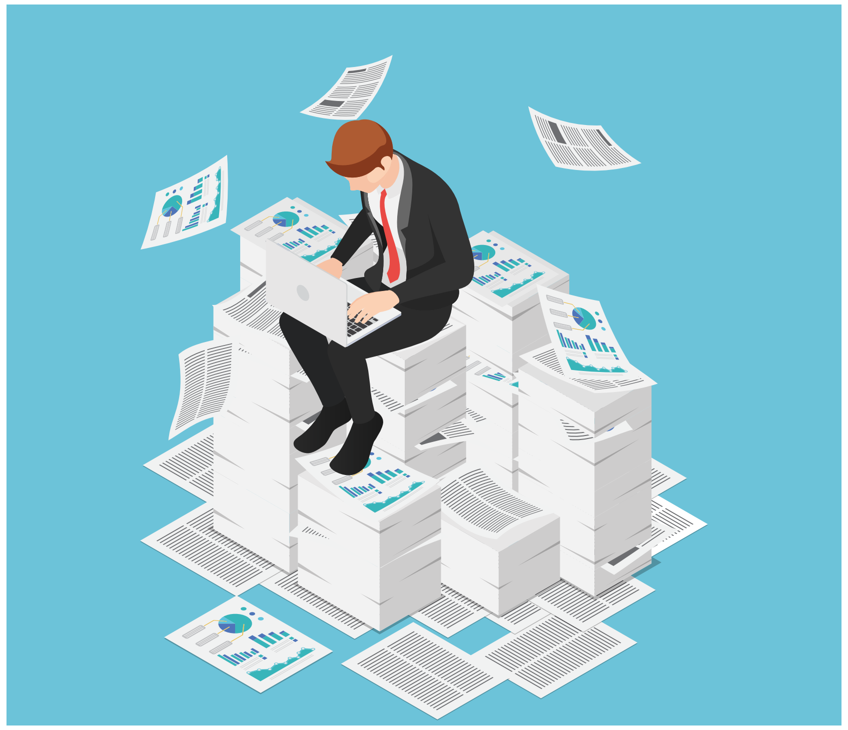
So, in six months, retail money went from being a mildly interesting phenomenon, to a systemic threat for hedge funds on the other side of its trades. It came down to a perfect combination of factors. A fearful populace locked down and robbed of their routine engagements, an investment landscape dominated by passive indexation strategies, unprecedented monetary and fiscal stimulus, democratised access to markets through zero commission brokerage apps, and the growth of Internet forums like the infamous WallStreetBets subreddit.

IT'S BEEN A LONG TIME COMING

This isn't the first time retail money has made its presence felt in global markets. In the early 2000s there was talk of Mrs Watanabe, the quintessential Japanese matriarch who headed out onto FX markets with the family savings, seeking higher yields in foreign currencies than the terminally depressed yen could provide.
Then, a decade or so later, there was the emergence of bitcoin and the subsequent crypto trading boom, another retail-led phenomenon. Not only did it switch on a completely new generation of traders, it also created generational wealth from scratch. New markets, new money, all retail.
The young traders buying up a beleaguered stock like GameStop, aren't doing so because they truly believe it can justify a valuation that's hundreds of times earnings. They've grown up in a topsy-turvy world punctuated by one crisis after another. Where money is conjured up out of thin air in staggering quantities but never seems to find its way into their hands. Where they're guaranteed to have a lower standard of living than their parents. Finally, at the height of yet another crisis that has detrimentally affected both their immediate and future prospects, they found a glaring instance of Wall Street's excesses (being short more than 100% of a stock's available shares), and banded together to exploit it.

How to turn your Mustang into a Tesla
This leaves brokers with something of a high quality problem. The new generation you've been waiting for is here. It is larger in number, younger, better capitalised, better coordinated, and more savvy than anyone could have predicted. Moreover, as we've seen above, it plays by different rules. Saddled with a generational sense of nothing-to-lose, this group is far more tolerant of risk than many in the industry have fully appreciated. Forget the Generation Xers and elder Millennials that you're used to.

The long-awaited next generation of retail trader is here



Both FX and stock brokers are currently sitting on a ton of unused data

This crowd earns bragging rights for how insanely risky its plays are, and legendary status among its peers for how catastrophic its losses. The YOLO trade, where one goes all-in with the entirety of one's capital, is more often the rule than the exception.

Execution and Risk Management tech
The modern brokerage, at a bare minimum, requires flexible order routing and execution capabilities where order flow can be dynamically segmented and distributed among A/B/C-groups per asset, client, trading session and more. Coupled with robust stress-testing of systems to allow for significant headroom in turbulent times, these steps can build resilience in a climate where Black Swans are becoming all-too commonplace for comfort.
In the past year, it's been US stock brokers that have borne the brunt of what this new trader can do, but there's nothing preventing coordinated action in currency markets, or precious metals CFDs. There are already rumours of a retail-led short squeeze in silver markets. Many legacy brokerage systems take for granted that 15 years ago, traders couldn't hope to communicate and reach consensus rapidly enough to pose a significant risk. Now they can, and so a data-driven response is necessary to spot trends developing from a distance. At the time of writing, the WallStreetBets subreddit has grown to 7.3 million members. The combined buying power of just a fraction of this community is difficult to overlook, especially when it can be directed all in one place.

AUTOMATED ON-BOARDING AND CUSTOMER SERVICE

Volatility brings more eyes to markets, leading to surges in registrations, which leaves brokers as overwhelmed at the front door, as they are in back office and dealing. Reinvesting a portion of 2020's profits in an AI virtual assistant, will allow these businesses to field incoming queries, prioritise traffic, maximise conversions, handle KYC/AML, and gather data all at once. This will free up support teams to offer their highest priority clients more of a personal touch. If 2020 taught us anything, it's that we can rapidly find ourselves in an exclusively online reality on the turn of a penny. Savings from in-person marketing endeavours that weren't feasible in 2020, are well-invested shoring up how brokerages handle incoming online traffic when it multiplies in a short period of time. These are the market environments that allow businesses that can efficiently scale up to really shine.

DATA ANALYTICS

Last but not least, the data. With comprehensive positioning data on the back-end, coupled with granular customer behaviour data on the front end, brokers can start developing sophisticated alert systems and response scenarios to market events like the ones we're witnessing. These can then be back-tested over historical data to find weaknesses. Only through this kind of iterated resilience-building can brokerages hope to meet the complexities and hidden risks of modern markets head on. Both FX and stock brokers are currently sitting on a ton of unused data. Those that are best able to consolidate these data and use them to strengthen their risk management capabilities while also being able to market their services to customers in a more automated and targeted way, will have a clear competitive advantage in the years to come.

FINAL THOUGHTS

The long-awaited next generation of retail trader is here. You promised them democratised access and a level playing field. You paved the way for their arrival with seamless mobile trading, low spreads, and no fees. Now they're flexing their muscles. For some brokers, this will quickly turn into a "be careful what you wish for" moment. For others it will be an opportunity to grow into the space and truly level-up in a world where retail continues to exert a greater influence.

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