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FX CREDIT - CENTRAL UTILITY MODEL

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Not just a pipe dream

OPTIMISING FX STP

AI and ML add intelligence to automation

PROVIDER OF THE MONTH

Cutting edge e-FX innovations from Deutsche Bank

OPEN BANKING

Why it is set to transform FX

DATA

Dominating the Buy-Side approach to FX Trading

COVER INTERVIEW

ALAN F. SCHWARZ
CEO of FXSpotStream

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July 2021

As we were preparing this edition for press the GFXC completed its review of the FX Global Code and has updated its principles of good practice in the FX market in several key areas. We didn't have time to include an overview of these updates in this edition but plan to provide that in the September 2021 edition. The updates to the FX Global Code followed an extensive process of consultation with the FX committees around the world and a public request for feedback in April. Updates have been made to eleven of the Code's fifty-five principles and strengthen the Code's guidance on anonymous trading, algorithmic trading and transaction cost analysis, disclosures and settlement risk. To encourage providers of algorithmic trading services to share their disclosure information in a standardised format and to assist clients in comparing and understanding the services being offered, the GFXC will be publishing an Algo Due Diligence Template. A Transaction Cost Analysis Data Template has also been developed to assist users of algorithmic trading services in evaluating the quality of their trade execution. We will be talking more about these developments in next month's August 2021 edition of FXAlgoNews.

In this edition our Market Commentary article is focused around an interesting proposition for a credit utility model which would address some of the key challenges faced by FX market participants without destroying their access to liquidity. The contributors have mapped out the story board for FX credit, by looking at what exists today against some of the past and future challenges. The authors provide a fascinating overview of the various dynamics at play and are hoping to encourage broader industry debate on the merits of extending the current process and framework to enable a more efficient FX Credit ecosystem.

Finally, our Data Management article this month summarises a recent buy-side roundtable event earlier this year. Demand for data particularly for pre-trade analysis in FX was a key theme and some firms talked about the potential for algo-wheels in FX to help quantify their choice of broker algo and incorporating "peer data" from other buy-side firms into their TCA. The big takeaway from this event is that data is increasingly critical in deciding how and where to execute FX trades.

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

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Tradefeedr launches FX data analytics platform

Tradefeedr, the community-based, FX data and analytics provider has launched its FX data analytics platform. By delivering a unified framework for sharing information, Tradefeedr provides a much clearer picture of the whole market's data and analytics than currently exists. Tradefeedr has created a common, truly independent FX trading database allowing market participants across the sell side, buy side, regional banks, hedge funds, brokers and central banks to

connect, analyse their trading data and collaborate. The company is rolling out its solution to more than 15 sell-side and more than 20 buy-side participants. "FX trading data and analytics are currently siloed between venues and the sell and buy side," says Alexei Jiltsov, Co-Founder of the firm. "The significant adoption we have witnessed is a testament to the support for our vision and business model focused on transforming the FX marketplace for the benefit of all participants."



Alexei Jiltsov

Deutsche Börse expands FX data offering

Deutsche Börse has further expanded its FX data offering by providing real-time FX pricing data from 360T through its CEF data feed. The offering includes data from 360T's and DIGITEC's award-winning Swaps Data Feed (SDF), as well as streaming FX spot pricing data sourced from 360T's Essential Data Feed (EDF). Deutsche Börse acts as licensor for the data. The SDF is a truly unique product which offers full granularity across the curve from

overnight to five years in over 40 pairs. "The Swaps Data Feed has been a true innovation in the FX market over the last few years. Our partnership with the banks has resulted in an outstanding product with a multitude of industry use cases. To now have this available through Deutsche Börse's CEF data feed raises its accessibility to the next level," says Simon Jones, Chief Growth Officer at 360T.



Simon Jones

EBS launches new platform

EBS has launched its next-generation EBS Direct platform. Customers trading on EBS Direct will benefit from enhanced processing times – below 50 microseconds – and faster market data on the new platform. This will enhance price discovery, provide greater certainty of execution and significantly improve fill ratios for market participants, while the creation of a more deterministic trading environment will create operational, execution and total cost efficiencies, improving overall

trading performance for both Liquidity Consumers and Liquidity Providers. "Providing our customers with unparalleled OTC FX liquidity and best-in class technology that dramatically improves latency and the execution experience for our customers is of the utmost importance to EBS," said Jeff Ward, Global Head of EBS. "The next generation EBS Direct platform is 10x faster than our legacy platform, and the underlying technology will enable us to further innovate by rolling out new

products, order types and execution logics in the future."



Jeff Ward

 Institutional

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Equiti selects FlexTrade's MaxxTrader FX solution

FlexTrade Systems has announced that Equiti has chosen FlexTrade Systems' MaxxTrader FX platform solution for their Prime of Prime Services Offering. MaxxTrader will enable Equiti to provide their prime of prime customers with seamless global FX liquidity aggregation, trade execution management, and institutional trading capabilities. Manish Kedia, Managing Director at FlexTrade said, "We are delighted that Equiti has chosen MaxxTrader as the technology partner for their global Prime-of-Prime

offering. We believe with our 'best-in-class' aggregation, pricing engine and distribution technology combined with Equiti's deep market understanding and strong relationships, clients will get access to a unique liquidity and comprehensive prime services solution." Iskandar Najjar, Equiti Group CEO, said, "We were looking for an institutional technology partner to take our liquidity delivery to the next level and FlexTrade's MaxxTrader Foreign Exchange Solution was the natural partner needed to cover

multiple anticipated use cases, be it credit or margin via GUI or API."



Manish Kedia

Monex and 360TGTX launch new Credit Hub in Mexico

Monex has partnered with 360TGTX to launch the first local credit hub in Mexico for facilitating FX trading. Many participants in the local Mexican FX market today face credit constraints which severely limit the amount and types of liquidity which they can access. To solve this problem Monex has begun leveraging its incredibly strong credit profile and position as a member of CLS to act as a credit hub for the 360TGTX platform. This

hub then enables any local firms in Mexico who have an established credit arrangement with Monex to use this in order to access the global liquidity ecosystem that is available on the 360TGTX platform. "We are delighted to be announcing this new partnership with Monex, which we think represents a major milestone for the Mexican FX market", says Matt O'Hara, CEO 360 Trading Networks, Inc. (Americas).



Matt O'Hara

KX enhances KX Flow platform

KX has announced enhancements to KX Flow, its white-label foreign exchange trading platform. The enhancements help financial institutions better manage market risk, with a new automated capability to optimise position and hedging strategies. Additional pricing and connectivity improvements further optimize pricing streams and enhance flexibility. New auto hedging capabilities extend hedging logic based on trade and position size, as well as on realised,

unrealised and total P&L per book. Risk can now be organized into multiple books, each with their own positions and hedging rules. These rules can be configured in real-time using a range of order types and smart order routing for optimized execution and profitability. "With the new KX Flow auto hedging capabilities, financial institutions can better control their risk through comprehensive rules-based position management tools that allow them to dynamically analyse and update pricing

and risk profiles in real-time," said Rich Kiel, Global Head of FX Solutions, KX.



Rich Kiel

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New Market Data Dashboard from Euronext FX

Euronext FX, the Electronic Communication Network (ECN) for foreign exchange and precious metals trading powered by FastMatch® technology, has recently launched a new market data product, the Euronext FX Dashboard. David Lyons, Euronext FX's COO, shares an overview of Euronext FX's latest product offering.



David Lyons

What is the Euronext FX Dashboard and what are its unique selling points?

The new Euronext FX Dashboard was designed to support market participants in meeting best practice requirements, increasing

market transparency for all market participants. It is unique in offering close to real-time information on market conditions, including Euronext FX ECN price movement, executed CLSsettlement-settled volumes, and metrics from the Euronext FX ECN reflecting volatility. As the electronic FX market landscape continues to evolve, one of the biggest challenges for market participants is how to meet the requirements of similarly evolving standards for execution, trading and disclosure, including:

- The FX Global Code, which sets out global principles for good practice in the FX market
- Regulators mandating Best Execution for clients
- Best practice and standards recommendations for trading practices, disclosure and execution,

which are being published by industry working groups and standards boards, and which market participants are expected to follow.

These factors all have a direct impact on market participants when it comes to determining market conditions, understanding market liquidity and making logical execution decisions based on these elements, and this is what the Euronext FX Dashboard is designed to address.

The product has been delivered in collaboration with CLS, can you explain the background to this approach?

The collaboration with CLS is a very exciting aspect to this product. CLS has a unique position at the centre of the FX ecosystem with over 70 of the world's most important financial institutions and over 25,000 third-party participants using CLS's payment-versus-payment settlement system, CLSsettlement. With over USD 5.5 trillion settled on average every day, CLS has access to the largest single source of FX-executed data available to the market. By combining anonymised and aggregated intra-day CLS settled volume data with data extracted from the Euronext FX ECN, we are able to deliver meaningful near real-time information to our clients.



Euronext FX Dashboard

What form does the data available from the Euronext FX Dashboard take?

In the data visualisation tool, intra-day candle charts (O,H,L,C) act as a reference point for up to 30 supported CLSsettlement-settled currency pairs. For each currency pair, market participants have the ability to 'temperature check' the market in near real-time. They receive information on average realised spreads from the ECN, average quote rates per second from the ECN, executed CLS volumes and numbers of executed CLS trades. Data frequency alternatives of 5-minute or 60-minute intervals provide users with a choice of granularity. This insight into intra-day market activity is unequalled. We offer clients a choice of currency pairs, choice of data frequency, updates and choice of delivery mechanism. Data is available online via our website, or via API.

Can you expand on the potential use cases for the Dashboard?

Market participants faced with decisions on execution have many aspects to consider when seeking to achieve Best Execution for their clients: liquidity conditions, volatility, cost of execution, and more. The Euronext FX Dashboard gives users access to near real-time information on market volumes and market volatility, and in combination these can help support the decision-making process on execution style. On occasion minimal volumes can have a big impact on the market, and sometimes significant volumes have no impact. Liquidity assessment includes taking into consideration market depth and activity. As an example, market conditions where less aggressive algorithms, designed to minimise execution costs and market impact, are appropriate, differ greatly from

circumstances when it may be more prudent to risk transfer using full amount liquidity or a more aggressive algorithm. The dashboard provides insight into near real time conditions, and the data we provide can assist in the decision-making process before execution takes place, and also act as a useful audit trail to help support those decisions once taken. Is it fair to say that the Dashboard acts as a real time Transaction Cost Analysis (TCA) reference?

Yes, it is, and in this sense it is unique. There are many excellent products in the market that allow clients to closely measure cost of trading and market impact. The Liquidity Management team at Euronext FX use our in-house developed technology to do just that. Our global team of LM experts works closely with our clients to build unique, bespoke liquidity pools for this purpose, using many of these post-trade TCA metrics. The Dashboard differs in that clients have the ability to track near real-time market conditions pre-trade. We see this as a complementary product rather than a replacement for existing post-trade TCA tools.

Are there any ways in which the combined Euronext FX and CLS MarketData deliver additional market colour?

Indeed. Working very closely with our Euronext FX Data Scientists team, we have developed a proprietary algorithm that offers insight into potential forward-looking market movement, based on observations of historical behaviour. The assessment of potential market movement is non-directional but it can be used as a forward-looking volatility metric. The Dashboard makes a 60-minute forward-looking assessment that can be updated every 5 minutes using multiple data points, all available via



"Our position at the centre of the FX ecosystem enables us to promote market transparency in a number of distinct and unique ways. The CLS collaboration with Euronext FX on their new dashboard product helps to further enhance transparency in the FX market. It is an important development in our strategy to partner with key FX ecosystem providers for the benefit of the broader market." Keith Tippell, Global Head of Product, CLS.

API as well as our online dashboard. As an example, consider GBPUSD is trading at 1.4010:

- At the start of a 60-minute window we can assess the possibility for the market to move in either direction by + or – a specific percentage value (the % changes dynamically between 0.1% and 0.2% to reflect recent market conditions)
- For this example let's use 0.1% or 0.0014
- The algorithm highlights the possibility that the market will move in either direction over the opening rate by > or < 0.0014 over the next 60-minute period
- The average accuracy for these expected market movements is typically more than 75%
- Clients who subscribe to our 5-minute data have this updated every 5 minutes and the potential outer 'boundary values' converge as the 60 min period elapses

How can clients access the Euronext FX Dashboard?

The Euronext FX Dashboard can be accessed online via our website euronextfx.com, or via FIX API. Contact our Sales team at Sales_FX@euronext.com.

FX Credit - Central Utility Model Balancing the appropriate level of risk vs control in a dynamically evolving global FX OTC execution ecosystem

By Basu Choudhury, Head of Strategic Initiatives, and Igor Zubkov, Head of Credit & Documentation services at Traiana



Basu Choudhury



Igor Zubkov

Over the last 20 years, the evolution in global FX execution platforms, products and the legal and regulatory framework has led to enormous growth in FX Markets but has created numerous challenges. Unlike other asset classes with centralized venues and exchanges, FX is a hugely fragmented marketplace with multiple venues and liquidity pools. The unbundling of execution and credit has fueled the rise of non-bank

market makers and algorithmic or systematic trading across buy-side FX participants. Credit intermediaries have largely succeeded in managing the risks for G10 Spot, however we are now seeing greater electrification in other FX products- NDFs; FX Swaps; FX Options and EM currencies resulting in increased credit challenges. Although market driven disruptions have been few relative to the scale and volume of FX execution, their cause and potential

long-term impact has recently led to calls for widespread changes to the existing risk models, methods and controls.

WHAT IS FX CREDIT AND WHY IS IT NEEDED?

Credit is the fuel for execution liquidity and must be controlled pre-execution until full and final settlement, as depicted in Figure 1, the original trading relationship and intermediary is crucial.

In FX, the bank and prime broker intermediaries play a crucial role for all participants in ensuring that FX execution can occur on multiple platforms but more importantly settlement finality is achieved by all executing parties. FX Credit is defined, agreed and controlled through legal agreements. Figure 2 shows the timeline view of FX Credit risk, in its raw form it can be broken down into execution risk, counterparty risk and settlement risk.

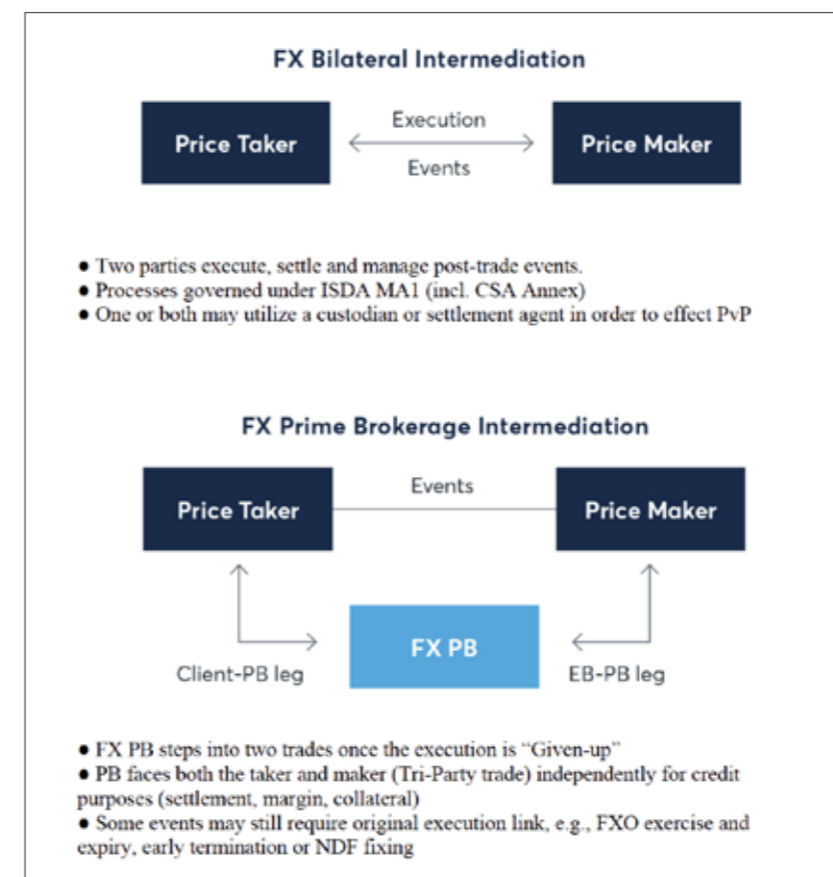


Figure 1: FX credit intermediation

Execution, counterparty and settlement risks arise from the point an FX order is submitted by the price taker. Credit intermediation allows the price maker to provide a price(s) and enable execution.

Importantly, all participants in the ecosystem are involved in using, controlling or managing credit risks to enable a smooth functioning ecosystem:

1. Execution liquidity pools – In-venue credit screening is crucial for liquidity and control for operators and participants alike
2. Price makers – Executing Participants need to monitor their utilization against agreed relationship-based limits
3. Price takers – Price takers bring diversity in execution and nature of participation, which not only creates opportunities but also presents challenges from an FX credit risk perspective
4. Credit Grantors – Grantors are the liquidity provisioners; however, they

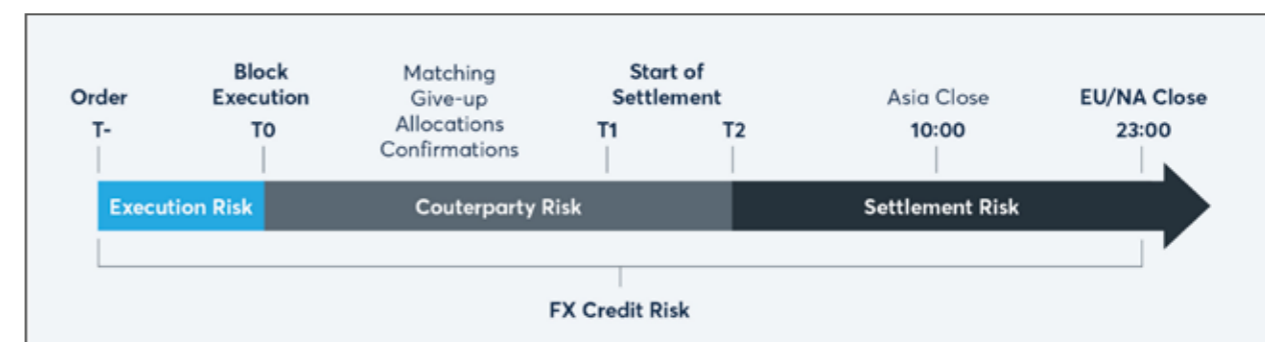


Figure 2: FX Credit Risk – timeline view

need to balance their risk-bearing capacity with potential for execution erosion for the end clients

Any proposed changes to the existing FX credit risk framework will need to consider implications for the pre-trade to settlement finality risks but also the potential negative impact on market access.

Another important participant, the central banks, also have a vested interest in ensuring a safe and efficient FX marketplace both in support of their macro policy perspective and for local currency stability.

CURRENT MODEL

FX credit processing has evolved through innovation and investment in technology. The unbundling of execution from credit processing has enabled diversity of both execution participation (non-bank, buy side systemic trading) and credit intermediation (FX Prime Brokers and Prime of Primes).

Products such as Spot are much more automated in end-to-end execution to settlement processing while others (e.g., FX Options) may be high touch - Figure 3 represents the typical process. Some platforms operate execution matching exclusively for Bank-to-Bank liquidity as they are the recipients of bilateral credit. While other platforms are focused on Client-to-Bank activity due to their access to a Central PB or multiple PB credit lines.

FX Credit - Central Utility Model

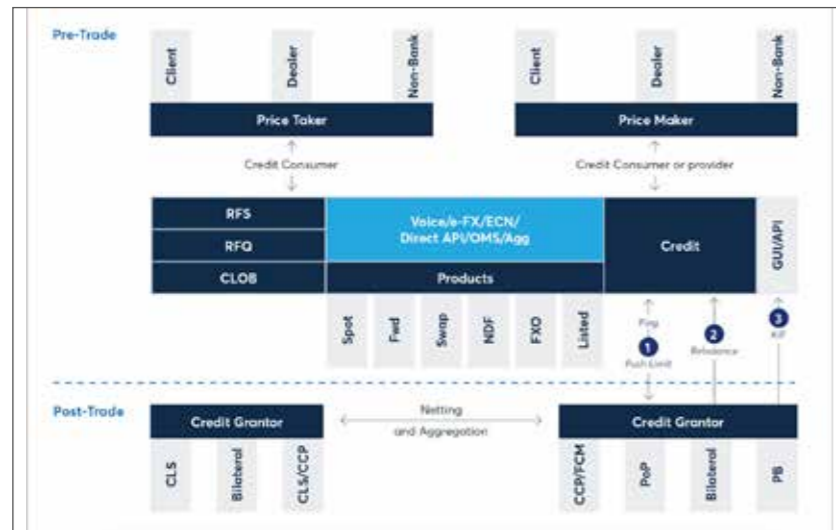


Figure 3: FX Credit Processing:

therefore subject to settlement risk associated with these local participants and may in most cases require credit from intermediaries who in-turn will rely on the local banks for settlement.

The combination of economic uncertainty, policy changes and requirement for real-world physical settlement of currency created a squeeze on funding markets which led to large volatile moves in FX rates and subsequent triggers for OTC FX Options, a perfect storm for credit intermediaries.

Along with defining the end-to-end process, Bank and PB intermediaries have developed a standardized frameworks of tools to enable robust risk management. Figure 4 highlights four key pillars associated with second line risk principles, Manage, Measure, Monitor and Control.

WHY THE FOCUS ON FX CREDIT?

Turkish Lira – An experiment in economic liberalization.

Recent Turkish Lira events can provide focus areas for what needs to change with the FX credit process or framework. Turkey's desire to be included in the European Union led to open capital markets and development of financial market infrastructure to help support growth in trading

of local equities and bonds, which attracted not only asset managers but also speculators seeking greater opportunities

Currency markets can provide an efficient mechanism for local and foreign participants to deal with local funding needs. However intraday funding gaps, government intervention and policy uncertainty can create risks and issues - Unlike many emerging markets, the Lira is a deliverable currency. Due to settlement occurring outside of CLS infrastructure, there is a reliance on local correspondent banks for physical settlement. This nuance means that foreign participants can and do utilize local entities to manage currency balances and visa-versa, typically on a foreign exchange venue. This implies that all participants are

CONSEQUENCES OF FAILURE IN PROCESSES OR RISK FRAMEWORK – WHAT HAPPENED?

It could be argued that these events and circumstances are unique to Turkey and are an anomaly; however, we have seen similarities with currency shocks in Russia, Indonesia and will continue to experience these going forward with Argentina, Poland, China, India and Brazil.

1. Volatility and instability with settlement of Lira – While no large losses can be directly attributed to the volatility in Lira, participants have faced challenging execution and settlement environment when the Turkish government has tried to control or stifle offshore markets by limiting local banks participation.

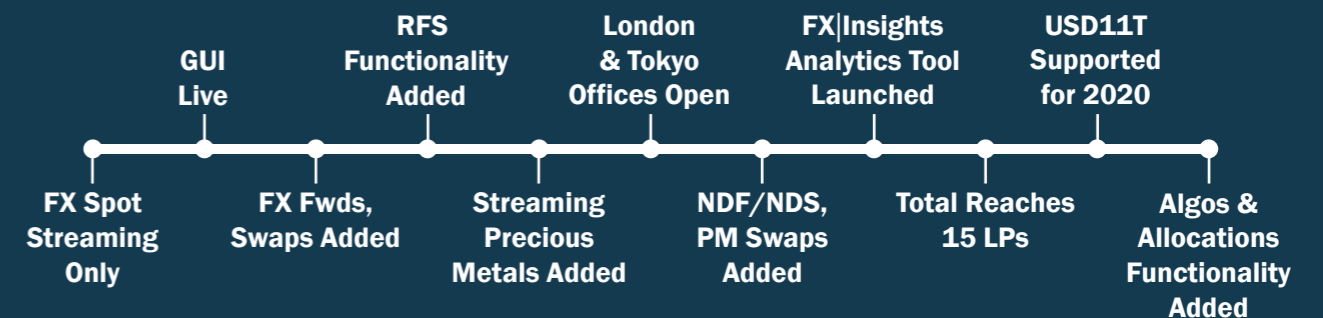
MANAGE	MEASURE	MONITOR	CONTROL
Credit Documentation Bilateral – ISDA Tri-party – DN, 3-way, 4-way, PoP	Credit Risk Product specific NOP, DSL	Trade Notification Post-trade STP from venues Post trade Give-up from LP/Venue	Credit Distribution Push or re-distribute limits across Venue(s)
Netting and Settlement Close out Netting, Aggregation, CLS	Margin Methodology VaR, %NOP, SPAN	Credit Utilization Near-Real Time Update of utilization	Termination Stops client trading across venues (automatic or user initiated)
Margin/Collateral ISDA CSA	Settlement Funding gap, Cash ladder		

Figure 4: FX Credit framework and toolkit

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FX Credit - Central Utility Model

Traditional Net Open Position (NOP) and Daily Settlement Limits (DLS) measurements may not recognize risky or volatility settlement conditions in an appropriate manner. Better credit controls across a wider spectrum of venues and Intraday liquidity savings mechanisms or pre-settlement tools and funding may be beneficial or required where CLS processing is not available.

2. Large PB suffers losses from Client FX Options exposures – In 2018 PB Reports of losses in the range of \$180m vs \$30m in margin against a single counterparty due to exotic FXO.

Firms offering FX Options should ensure relevant margin models that are linked to credit measurements. Additionally, management of inventories is crucial otherwise pin risk can cause mismatch in settlement exposures that cannot be met due to stickiness in local funding markets.

REGULATORY CHALLENGES – WHAT CHALLENGES WILL FX MARKETS FACE IN THE FUTURE

G10 policy goal is to incentivize central counterparty clearing and reduce the overall systemic risk in OTC markets by imposing Margin and balance sheet (Leverage and Liquidity) constraints, while the FX Global Code is a set of standards that FX participants have voluntarily adhered to.

Margin: Unlike IRS and CDS there is no mandatory clearing obligation for FX products therefore executing parties and intermediaries have a choice. This implies that FX credit models may need to incorporate multifaceted execution to settlement paradigms, including PB to Clearing, Bilateral to Clearing or indeed a cleared product from point of execution. Execution venues and optimization providers will look to enhance margin management tools, credit process and framework

to support both deliverable and non-deliverable G10 products.

Leverage: The implications are that margining will become more relevant and important in managing balance sheet exposures, even for deliverable products which do not require posting of IM or VM. In addition, larger firms may be incentivized to reduce their overall exposures facilitating growth in different forms of credit intermediation (Prime of Prime) and Non-Bank Liquidity Providers.

Liquidity: Due to focus on correspondent banking risk associated with intraday liquidity exposures, over the next 5-10 years the industry may see growth in Central Bank Digital currency (CBDC) implying greater direct access to central banks settlement, liquidity savings mechanisms and potential for product innovation including execution and PVP of shorter dated FX digital products.

FX Global Code of Conduct

(FXGCC): Over 1000 participants have signed a “letter of intent”, the FXGCC is explicit on what principles need to be incorporated for firms who participate in wholesale FX markets; however, it does not define how and what needs to be implemented. If the FX markets do not take the lead, future iterations may include explicit regulations.

Technology is a key enabler to resolving some of the improvements we have highlighted but in many ways defining industry standard business process and data standardization will be essential to achieve a viable end state.

A CENTRAL CREDIT UTILITY MODEL

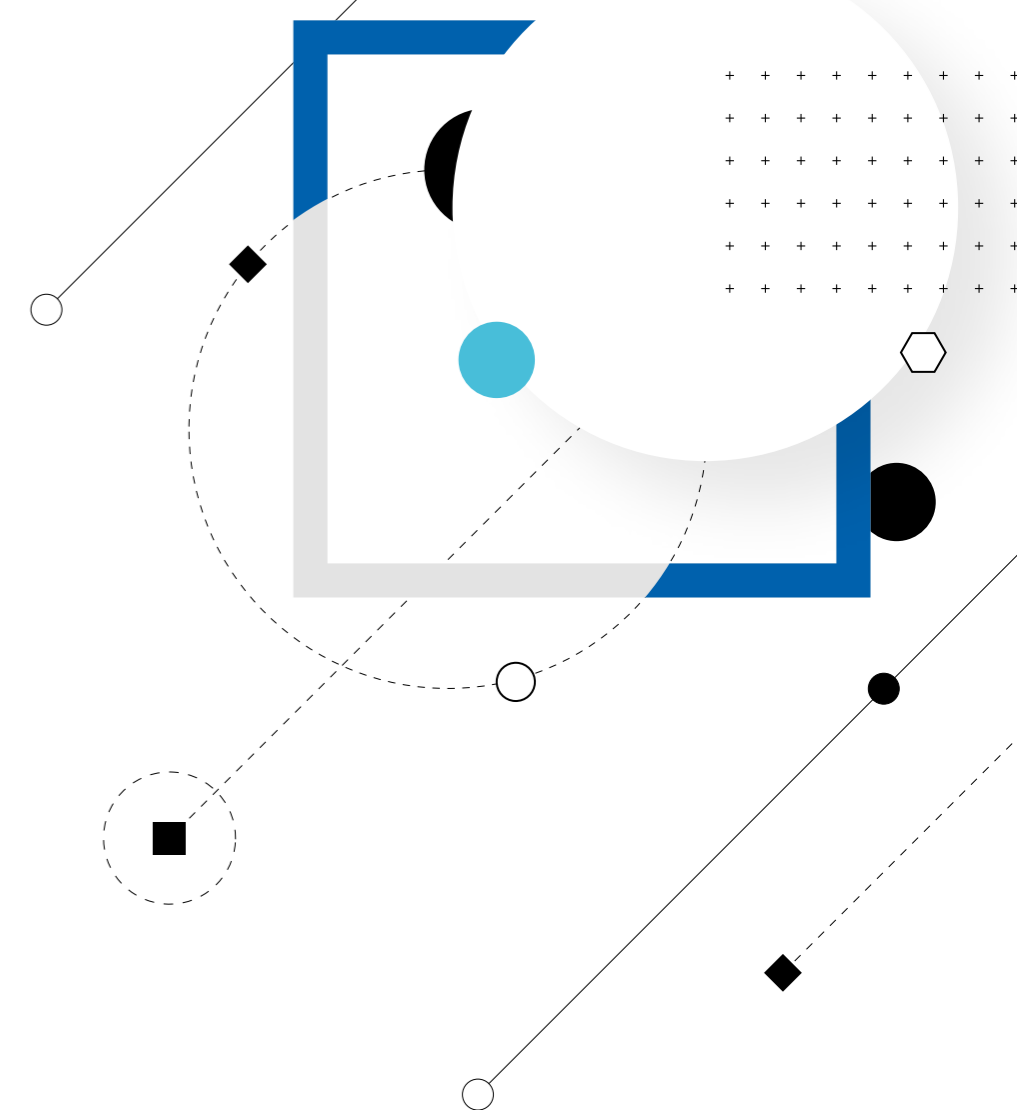
Credit utility should allow and enable independent evolution and growth of execution liquidity pools while providing all participants with visibility, control and most efficient use of credit.

Designing a Process model in partnership with industry body and representation from all categories of participants, is a crucial first step. Although not mandatory, a central utility service could be the centerpiece of the ecosystem and could implement and enable the interactions. The merits and benefits of a utility model are well understood with-in the financial markets and provide value for both participants and regulators.

We have observed this with varied level of success within the FX markets with the introduction of CLS in 2002. FX Clearing infrastructure has evolved organically since early 2010’s with some market penetration for the NDF product but little traction across other cash products. Importantly, the challenges with an FX credit utility are much broader in scale and participation, unlike CLS and CCP an initial bank only focus may not address the core issues. The importance and inclusion of all participating firms: vendors, platforms, price takers and makers are crucial to the successful transition into a viable FX credit microstructure. As a minimum, a holistic design approach should be taken in order to meet the needs of all participants in the ecosystem.

It is unknown if the utility would need to register as a Credit financial market infrastructure (FMI) – for debate – however, an appropriate governance structure, rulebook and legal framework would ensure appropriate access for FX participants. Additionally, future iterations could enable extension into other asset classes such as Exchange Traded Derivatives, Repo and OTC Equity Derivatives where similar credit intermediation issues exist.

Whilst providing access and implementing core processing would be paramount to the service, the Credit Utility would need to ensure some core



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FX Credit - Central Utility Model

Manage	Monitor
Goal: Increase Participation	Goal: Increase distribution
<ul style="list-style-type: none"> ➤ Storage of Bilateral, Tri-Party, Prime of Prime and clearing documentation linked to Credit framework: 	<ul style="list-style-type: none"> ➤ Credit Distribution to wider set of participants and agreements ➤ Credit Updates for post-trade Inventory events
Measure	Control
Goal: Improve tools and Key links	Goal: Address overallocation issues
<ul style="list-style-type: none"> ➤ Enhancements to FX Credit Measurements for FXO / EM ➤ VaR based Margin Models with links to credit measures ➤ Support calculation for the full list of FX products ➤ Intra-day Liquidity mgmt. tools with links to credit measure ➤ Recognize Duality of Products and Post-trade Credit models 	<ul style="list-style-type: none"> ➤ Efficient credit allocation model and control ➤ Extend ability to terminate clients across more diverse liquidity pools

improvements to the current toolkit which would allow intermediates to

meet their goals in order to Manage, Monitor, Measure and Control FX

Credit risks. Increasing participation, improving tools and links, increasing distribution and addressing the overallocation issues would be the primary goals of the service.

Credit Processing

Goal: Processing model designed in partnership with industry body and representation from all category of participants

- Standardization of Credit Data Model and APIs
- Pre and Post-trade Order screening
- De minimis core requirements for execution venues
- De minimis core requirements for Bank participants:
- De minimis core requirements for Non-Bank participants:
- De minimis core requirements for Direct API, Aggregators and OMS participants

CONCLUSION

The above provides a high-level view of what functionality would need to be encompassed into the utility service. Although much of the detailed picture will already be known to participants and providers alike, many new facets could be introduced with engagement across a wider spectrum of FX market participants.

Structured formal engagement is a first step and one of the core initial debates would center around the need for and merits of a central utility. Indeed, the intention of the paper was not to provide all the answers and disclose a definitive service proposal. Instead this is the start of a journey. We welcome and encourage broader engagement and debate on the merits of extending the current process and framework to a Central Utility model in order to enable an efficient well-functioning FX Credit ecosystem.



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Deutsche Bank: Cutting edge innovations in e-FX increase client engagement

Deutsche Bank has been actively ramping up its e-FX business over the past year with a string of innovative new releases. e-Forex spoke to Vittorio Nuti, Global Head FX Algos at Deutsche Bank, about keeping up the pace of development in line with client needs, even during the disruption caused by the Covid-19 crisis.



Vittorio Nuti

Vittorio, the e-FX business has had a very successful year and picked up an impressive number of industry awards along the way. Can you tell us what the drivers were behind this run of key roll-outs?

From my perspective, I've been proud to see how the pace of development has continued across all of the FX teams at Deutsche Bank. We've been working from home for quite some time and now we're gradually going back to the office, but it's been really encouraging to see how well we managed to keep up the levels of

engagement with our clients. We're very pleased to have been recognised with a number of industry awards over this period, including our success in the recent Euromoney FX Survey where we improved our positions in 34 of the 63 categories, and gained 13 number 1 rankings. Our development of new products and rollouts has also significantly increased, despite the challenges of the past year.

On the specifics, the demand for mobile has continued to increase among clients but the pace of uptake has really sped up in recent months. We meet this demand with the cutting-edge Autobahn Mobile for FX app that includes a whole host of market-leading security features, as well as our award-winning Market Colour app.

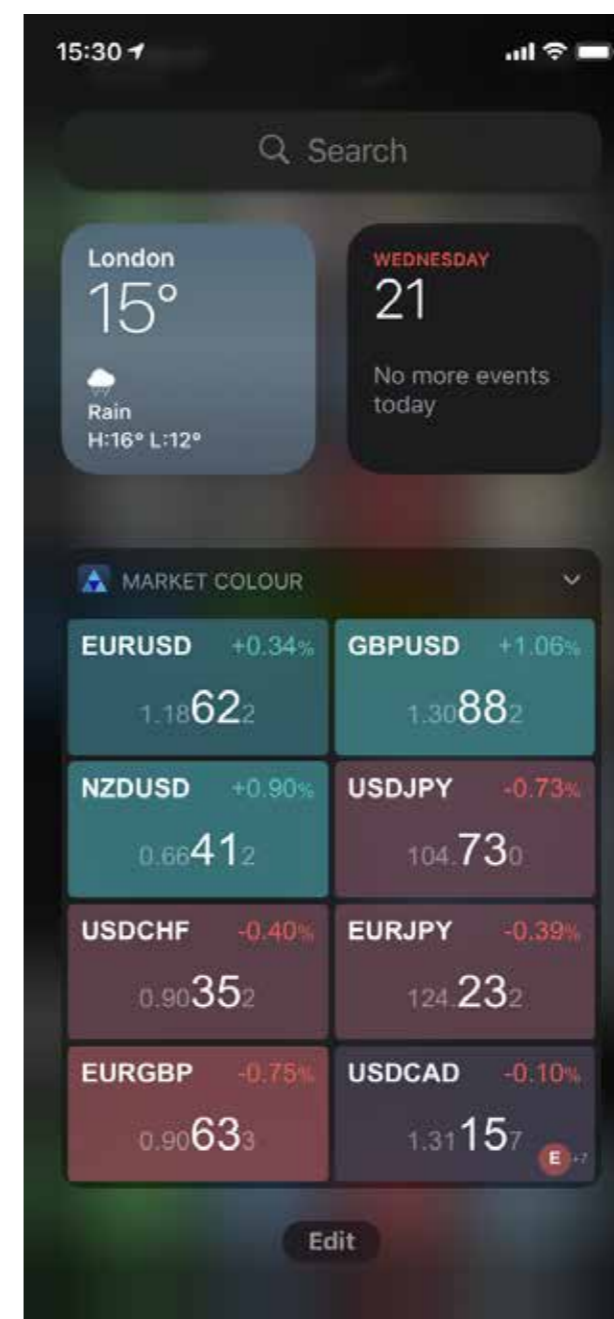
We have recently launched our integration with Bloomberg, so now clients can access the Market Colour app directly through that platform, which is a new development that has been very positively received. In addition, we will keep going to expand the range of studies available through Market Colour, as well as continuing to further enhance the functionality of the app itself.

Our next phase of development will be focused on pre-trade analytics to make those even more precise, an area which is notoriously complex, but where we are confident we can again deliver an improved client experience. On the TCA front, we're now connected to all the various third party platforms so if clients want to have the data sent to one of those providers, then that is now possible.

You mentioned increasing the number of studies available through Market Colour. Could you share a little more detail about why that is so important?

Again, what we are doing is all aimed at increasing engagement with our clients. Our new Realised Vol study is a good example of this. In this study, we analysed the realised versus implied volatility over a fairly short-term basis, which is something that no one has really looked at before. That measure is particularly powerful for those clients that trade volatility, for example, by being able to show whether the current vol is being priced appropriately or not. Clients across the board are very interested in the study.

Market Colour is also not focused



Examples of the Market Colour mobile widget and app home screen

on just a specific area, such as algo trading, but covers all markets – derivatives, spot etc. That is really where you can engage the client more.

The study itself came about because until then there had been no easy way to understand the true cost of gamma and volatility, such as when you're trading gamma in terms of your deltas in a portfolio of options or as a single option. In that case, you want to understand if the realised vol is higher or lower than what was implied by the market. The study

allows you to look at this in various ways, either as rolling realised vol or sliding realised vol, but either way it shows you where the implied volatility was. The big difference between this and most other studies on realised vol is that we take into account the bid offer that you would actually pay in the underlying market. That gives you not just the mid volatility but also the long vol you pay in the spread, as well as the short vol. Until this study there wasn't really an easy way to see this visually on a simple dashboard, but now there is.

And have you been doing any development work specifically in terms of adding to the features and functionality of your Autobahn platform?

Yes, literally hot off the press we have a new product release called Principal Resting Order (PRO). PRO is a very exciting as it effectively allows clients to stream FX and precious metal limit orders to Deutsche Bank via the Rapid API. This means that clients now can place orders direct within our own pricing engine which is a very big

Deutsche Bank: Cutting edge innovations in e-FX increase client engagement



Realised Vol study example

development, particularly for very sophisticated FX clients. Clients are able to interact with PRO by streaming individual or mid orders and can access a very different pool of liquidity than has previously been available to them. This gives a lot of flexibility to the clients that use PRO as they can now effectively place passive orders, as well as aggressive orders, direct to our book. It is really a powerful tool for users of fully automated systems that want to hedge their exposure or enter into a position.

What changes have been made recently to further enhance your existing FX algo offering?

In the past year we've added PRO Liquidity, which allows clients to place

PRO orders through our algorithm. This leverages our in-house technology but also expands the number of liquidity pools that the algos can access.

A further key development is the addition of NDFs to our algo suite and so we now offer algo execution across all the Asian NDFs as well LatAm NDFs. We are one of the very few banks that offers Brazilian Real (BRL) BMF1 expiry and we just released the ability to trade the BMF2 expiry directly. This means clients will be able to trade to these two different dates directly with the algos and with our other LatAm NDFs: Chilean peso, Peruvian sol and Colombian peso.

We know that our clients are looking for a one-stop shop for their

execution needs. By offering this very comprehensive base in terms of the number of currencies and products available, we are going a long way to meeting that demand. We'll also be spending more time during the second half of the year further fine tuning and enhancing our execution to ensure we are continually improving outcomes for our clients.

In terms of the wider e-FX business, have you been building any products to support trading in specific FX instruments?

We are currently rolling out a whole new pricing engine for the forwards side of business, and we are really seeing a decent pickup in client volumes and the levels of client engagement.

This has been a success, which is great to see as the team there has done a fantastic job in completely re-engineering our pricing engine effectively from scratch. This supports better precision in our pricing which helps clients to trade more often and enables us to skew our interest a lot more than we have been able to in the past.

In NDFs, our principal desk has made solid improvements in our Brazil pricing. Then on the derivatives side, we're continuing to do what we're best at – developing complex options and structures with AOS, our electronic structured forwards offering. AOS is extremely flexible and continues to be very popular with our client base.

In the coming months we'll be continuing to improve and enhance our current systems, such as further improving algo executions, while also rolling out the new products to our clients.

It's exciting times, and we're just getting started.



The demand for mobile trading has continued to increase among our clients

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Not just a pipe dream: Achieving same day settlement in FX

Technology enabling T+0 settlement exists and is utilised in the digital assets world, so why does it still take two days in the foreign exchange market (FX)? Andy Coyne, Co-Founder and Chief Product Officer at Cobalt, believes that FX can benefit hugely from instant settlement and that with the right infrastructure and support, it can be achieved.



Andy Coyne

Trades are executed in microseconds, payments delivered in seconds and yet settling a spot FX trade still takes 48 hours! A recent trial in the equities space, coupled with fallout from the Robinhood margin call crisis, kicked off a major debate across financial markets on the pros and cons of

same day settlement. Critics argue new technology isn't a strong enough reason to embrace it and that major work would be required due to significant behavioural and operational challenges. However, the success of instant settlement in other markets, such as digital assets, shows that with the right infrastructure and technology it can work.

T+2 SETTLEMENT

The spot FX market currently operates on two-day or T+2 settlement. This has been the case in the FX market since the 1980s – a time when capital controls were in place and technology wasn't particularly sophisticated. Clunky telex machines were used for a lot of post-trade processing and back then the FX market had no centralised

infrastructure, such as a clearinghouse. Manual processing took two days and so T+2 evolved as the norm. Since then, FX has been completely revolutionised by technology, particularly in the front office. Yet it still takes two days to settle an FX transaction.

SAME DAY SETTLEMENT

Same day settlement means that as soon as a trade is executed, it is recorded immediately, the money and securities move between the two parties and the trade is complete. The same day time settlement or T+0 debate was re-ignited earlier this year when Credit Suisse and Nomura-owned broker Instinet, settled some US equities trades using blockchain.

While blockchain has been used to settle many transactions, this was 'a first' because settlement occurred in just a couple of hours, not the 48 needed with America's Depository Trust and Clearing Corporation (DTCC). The exercise demonstrated the ability for firms to execute and settle trades conducted throughout the day.

The progress has been described as 'a financial version of moving from the snail mail of posts to zippy emails.' This is because institutions currently

use a third party, the DTCC, to transfer assets, net off balances and collect margin to protect against losses. However, Credit Suisse and Instinet cut out the middleman and dealt directly with each other by recording the trades on a shared ledger, and much faster. While this was a small trial with a few trades, it has made some senior people at key infrastructures rethink their approach because it has highlighted what new technology like blockchain can do.

This exercise has also shone a spotlight on the sheer inefficiency of two-day settlement. It requires siloed back-office operations to process deals which is costly and creates risks around agreement and transfer of collateral. It is estimated that \$15bn to \$30bn of industry capital and twice as much liquidity are tied up in DTCC systems.

Robinhood saw first-hand how costly the inefficiencies of T+2 can be when it had to suspend trading on stocks including Gamestop in order to post money with the Depository Trust & Clearing Corporation (DTCC) to collateralise trades during the two days it takes for them to settle, causing outrage amongst customers.

With T+0, no collateral would have been required. Logically, Robinhood CEO, Vladimir Tenev, has become one of the biggest advocates for the change. Furthermore, these longer settlement cycles leave participants susceptible to counterparty credit risk. This is particularly dangerous in periods of high market volatility where prices can change suddenly, and trading volumes can spike. For example, the unprecedented volatility resulting from the COVID-19 pandemic led to a 300% margin increase in March 2020 over historical averages.

In these circumstances, the longer the settlement cycle, the higher the risk

<p>Margin Relief, Risk and Volatility</p>	<p>Even at T+2, one of the last remaining exposures in the settlement system is time. Time increases the risk that an unpredictable event could significantly affect the transfer of cash or ownership of securities from the point of trade execution through settlement. Because a key component of risk management is the time between trade and settlement, shortening the standard settlement cycle to just one day after trade execution could further reduce operational and systemic risk across the industry. The market stress of the past year brought on by the COVID-19 pandemic provided additional data with respect to margin procyclicality, a topic that continues to be in focus.⁴</p>
<p>Reduction in Liquidity Requirements</p>	<p>Accelerating the settlement cycle reduces the number of unsettled positions in a member's portfolio, and thereby reduces the liquidity resources NSCC needs to maintain in the event of a default.</p>
<p>Capital and Operational Efficiencies</p>	<p>Accelerating settlement to T+1 would not require large operational or technical changes by market participants, nor would it cause fragmentation and risk to the core clearance and settlement ecosystem. In fact, many of the technical and operational issues that were previously seen as barriers apply only to T+0 settlement, and T+1 can today be largely supported with current systems and processes – which means the industry can retain the core benefits of DTCC's centralized netting and risk management, even while moving to an accelerated settlement model.</p>

Benefits of Accelerated Settlement

that investors may incur significant losses and be unable to fund their transactions. It's also worth noting that FX plays a vital role in underpinning the stability of other financial markets, including securities, and that same-day settlement will allow securities traders to use FX to fund their trades quickly and safely, as well as reduce their counterparty risk.

Meanwhile, with certain digital assets, settlement can occur within seconds and value can be moved fluidly. This decreases counterparty risk as it enables a more efficient settlement process. It's proven in a growing market and has successfully mitigated concerns around capital requirements and counterparty risk.

SPEED BARRIERS

Despite all of the excitement, such a step change would not be as simple and fast as your average software update. This type of move would require a complete overhaul on multiple levels, and the last such shift - from T+3 to T+2 - took 14 years.

That said, DTCC has recognised the need for shorter settlement cycles and

proposed to cut settlement times to one day by 2023, if all its members approve. It released a paper which highlights the immediate benefits of moving to a T+1 settlement cycle, including cost savings, reduced market risk and lower margin requirements, and outlines the firm's plans for garnering the necessary support for the project across a wide range of market participants.

While this is a step in the right direction, does this go far enough? Is there much point in doing it incrementally when the technology already exists to make settlement instantaneous? In order to do it properly, the market needs to be fully behind it. This is because to go to T+0, market participants have to be 100% accurate with no room for error so matching and credit need to be up front and other back-office functions such as aggregation and netting as well as compliance and risk checks still need to catch up.

TOO MUCH TOO SOON?

While same day settlement is achievable, there is also a case for not going too fast and shooting

Source: DTCC

The T+0 debate was re-ignited earlier this year when Credit Suisse and Instinet, settled some US equities trades using blockchain



Not just a pipe dream: Achieving same day settlement in FX

for instant settlement. Blockchain plays a significant role in validating transactions and providing all parties with an irrefutable distributed ledger, but there is more of the settlement process to consider. For value to be deposited and withdrawn instantly from traders' accounts, the whole back-office is required to work just as fast. This is unfeasible with current legacy systems.

Additionally, there is also the financial reality that not all trades are completed with the immediate availability of the buyer's cash. Real-time settlement could require that transactions are funded on a transaction-by-transaction basis, eliminating the liquidity and risk-mitigating benefits of today's netting features. Instantaneous settlement would require trades to be prefunded on an unsecured basis, which could limit market liquidity.

A substantial amount of work would also be required to settle each individual transaction, rather than netting them out at the end of each day. This is particularly relevant to high frequency traders and the volume of transactions they action in just milliseconds. It would be near impossible for them to settle these trades individually as the number of transactions to be settled would soar and the number of failed transactions could rise significantly.

As such, a different approach to T+0 may be needed. DTCC's paper states that many of these issues apply solely to T+0 settlement, and a move to T+1 would not require large operational or technical changes by market participants, nor would it cause fragmentation and risk to the core clearance and settlement ecosystem. It argues that with a move to T+1, the industry can retain the core benefits of centralised

netting and risk management, while moving to a shorter settlement time. The DTCC has also previously proposed the idea of a T-1.5 cycle whereby transactions are processed overnight. This would involve work through the night to ensure settlement by that morning's margin call.

Another alternative is the introduction of various settlement windows throughout the day which could provide some slack in this transitional period. This would then allow firms to net out a few times per day, while also settling on the same day. A number of central banks are exploring extending the connectivity and operating hours of their real-time gross settlement (RTGS) systems, which could have a positive impact on FX settlement times.

There is already a significant overlap between RTGS system operating hours around the world that opens the door for currency settlement to take place faster, including same-day settlement. If RTGS system operating hours were extended even further, this would allow for a greater number of same-day FX settlement cycles to take place during overlapping hours. In theory, real-time settlement is achievable, but the logistics of such are more complex. It may be more pragmatic to look at same day settlement, and even then, this journey may be longer than some would hope.

WATCH THIS SPACE

This debate is likely to rage on and it's clear we can't just transform one legacy back-office process and expect it to work. All of the other interlinked processes have to be brought up to speed at the same time. That said, there are huge potential savings for FX firms as tighter settlement cycles reduces collateral requirements, so the rewards could be significant, and

the technology and processes clearly already exist in the digital assets market.

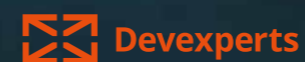
In short, we are seeing a coming together of the best of both digital and fiat worlds. In fiat, there are decades of regulation brought about by the correction of behaviour, so that trading and post-trade capabilities are much more scrutinised and a global code of conduct has come to the fore. Institutional operators need the same level of protection and control when trading digital assets. In digital markets the fact that a transaction is recorded on a shared and secure infrastructure in near real-time is a step change for the fiat trading community. The same should therefore be true of fiat settlement.

While T+0 is possible for fiat, a change in process needs to be adopted and this will likely start with those who are trading digital assets moving to trade digital fiat. We are seeing a move toward T+x hours in terms of settlement, so that any move to settlement provides sufficient time for error correction, trade offset and fee reduction before committing to ledger. We see that PvP may be possible in not just crypto assets but also between digital fiat assets. Collateral movements are also inextricably linked to settlement, so settlement confirmation will also adjust the collateral requirements. Speedier de-risking of portfolios is much better for balance sheet and credit limits and this derisking will aid trading, giving everyone much better, accurate and safe market access.

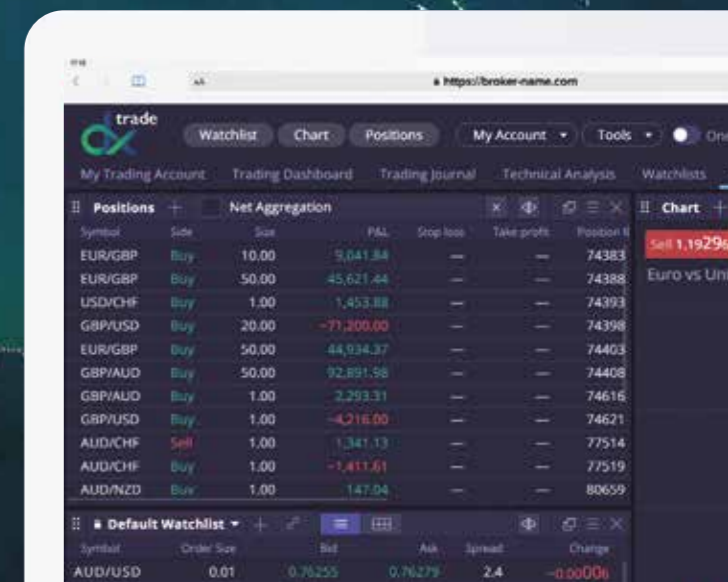
In a world where numerous fintechs have disrupted entire industries, the big incumbents involved in the settlement process should be listening to their customers views on settlement, otherwise, they could be left behind, alongside T+2.



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Alan F. Schwarz

FXSpotStream

A remarkable growth story driven by exceptional client service, agile product delivery and extreme attention to detail

FXSpotStream was formed in 2011 and is a subsidiary of LiquidityMatch, the bank owned consortium operating as a market utility. The company has been achieving extraordinary growth figures and so we spoke to its co-founder & CEO, Alan F. Schwarz, to see what lies behind this and how the firm has been navigating the difficulties thrown up by the COVID-19 pandemic.

How has the year 2021 started for FXSpotStream?

2020 was a great year for us with overall volume up 18.52% over the prior year, and we are delighted to say that 2021 has maintained that momentum. In March '21 we recorded our second highest ever ADV at USD54.674 billion. This year we continue to see strong growth in all products, most notably Swaps (up 44% YoY), Forwards (up 57% YoY) and NDFs (up 233% YoY).

We see the growth in our volumes as a reflection of our achievements in two key areas. First, we are always looking for opportunities to bring on new clients and find opportunities for both LPs and clients to expand their existing business through FXSpotStream (FSS). Second, we continuously focus our resources on adding to the product offering while

never forgetting that supporting the existing users of our Service needs to be at the top of our list.

What do you think drove your company's success last year?

In 2020, FSS registered as the fastest growing eFX service for the third consecutive year. 2020 was a unique

year for everyone and not something anyone could be completely prepared for. Of course, we always plan for growth and look to have extra capacity in our infrastructure, so that certainly served us well.

Despite the extreme volatility that started in late February and continued into March, our Service



An ongoing reason for our success is that our commercial model remains unique to this day

FXSpotStream - A remarkable growth story driven by exceptional client service, agile product delivery and extreme attention to detail



It was important for us to grow our support network in tandem with our product offering

performed extremely well. Pricing from our Liquidity Providers (LPs) was always available. We saw extreme volatility, but we saw our banks pricing consistently and risk being transferred. In addition, our infrastructure, connectivity and communication tools were up and we had no disruption in the Service at all.

An ongoing reason for our success is that our commercial model remains unique to this day. LPs are charged a flat fee to trade as much as they want with their clients, while clients

pay nothing to use the Service. The more an LP trades with a client, the lower their “effective rate.” Because our LPs pay less when they use our Service, we now see many LPs paying a nominal per million fee effectively compared to any other service on the street. This gives LPs the maximum amount of flexibility when it comes to pricing clients. We also allow our clients and LPs to interact with each other in a much more efficient and cost-effective manner by connecting physically over one API to various clients in the case of the LP and 15

LPs in the case of our clients. In addition to our commercial model, the disclosed nature of the LP and client relationship over FSS remains a significant reason for the growth in our volumes. The trend we have seen for the last 6 years in clients and LPs migrating to disclosed trading continues as they want to know who they are interacting with at all times. The nature of the disclosed relationship also allows for the parties to address credit, market impact and information leakage concerns.

We recently reported on your plans to support Algos and Allocations over the API. How is that project coming along?

In late June we went live with our support for the LP Algos and supported Allocations and now have multiple clients live accessing this functionality. The project was a great step for us and gives us the opportunity to broaden our reach into the FX market.

A great deal of work has taken place on our API to support all the Algos of our LPs. Our aim is always to make the interaction between our clients and LPs as efficient as possible. Clients seeking to access the Algos of our LPs will not need to add any additional network infrastructure, connecting in the same way as they do today - accessing a normalized API through a single FIX session that provides access to algos offered by multiple providers.

Significantly, clients do not pay a fee to FXSpotStream to access any of the supported LP Algos, which remains a key part of our ‘free to taker’ model across the Service. Any fee LPs charge the client is handled away from FSS.



We have a deep bench of talented individuals with many years of experience in the banking sector and at other FX venues

What factors influenced the decision to support all Algos?

Although the pandemic has certainly accelerated the need for more automation, the topic of Algos was already high on everyone’s agenda. When we looked at the offering, it was not just one Algo per LP and that led to an interesting choice for us. Some of our banks offer dozens of Algos and a number of parameters, while others take a different approach - offering a VWAP, TWAP and a few other variations.

We felt that given the varied nature of our client base, coupled with the variety of Algos offered by each bank, there was a real need for us to normalize everything rather than

having to cherry-pick the best Algos available. We did not want to be in a situation where a client was unable to customize their execution preference because we did not have the desired Algo available via the Service. We know that can lead to clients looking for a solution elsewhere.

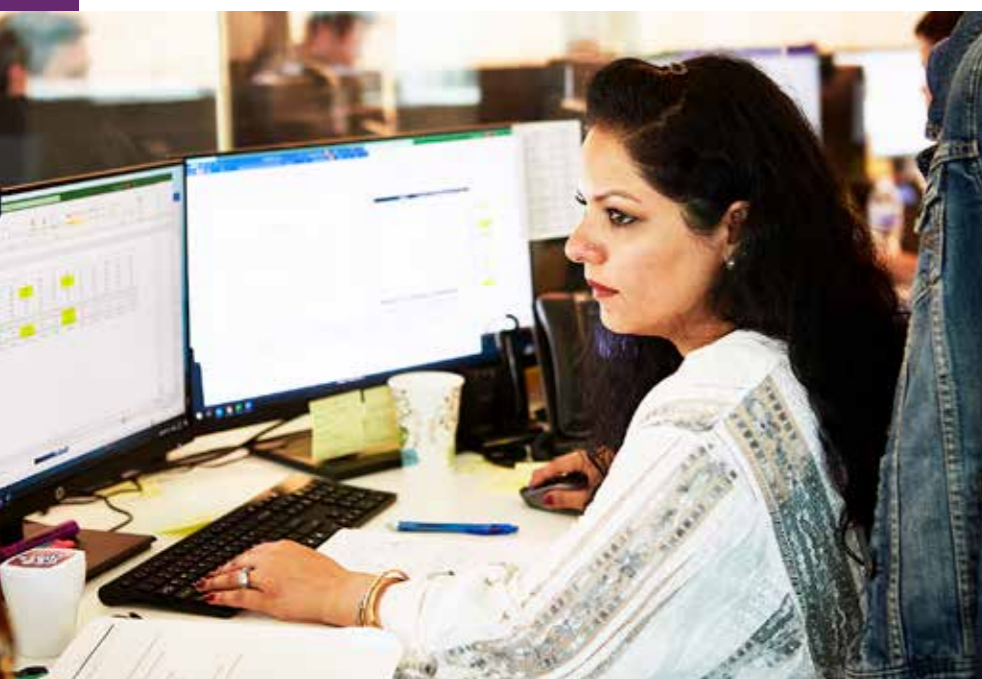
As we started the process of normalizing all Algos, we were confident we had made the right choice and the work would be worth it. Now we are in a position to offer the entire Algo suite of our liquidity providers, which currently includes over 70 different Algos and 200 plus parameters.

Why did you choose to target the API initially?

The majority of Algos in the industry are currently supported over a GUI, and that is coming at the end of this year/early Q1. However, with the effects of the pandemic still being felt, especially in the workplace, we saw a growing demand from clients for the automation of their processes, controls and reporting functions. Automation brings resilience, especially in the case of a dispersed workforce, and that just screamed ‘API’ to us, which is our strong suit.

We, of course, know there is a lot of Algo business being done via a GUI, however, we have started with our strength - the API – and will complement that with the GUI that we will be rolling out. Our GUI will offer everything our API offering has, and we expect that once live a

THE E-FOREX INTERVIEW



Our US team are all back to the office



Although we are now closing in on our ten-year anniversary as a company we emphasize a small-business mentality with our team

good number of clients will migrate to the API. We see real benefits in using the API, however, we also appreciate the need for clients to build a level of comfort on the GUI before making the natural transition to the API.

You are joining a competitive space with this launch, does that concern you?

We are not concerned. We are leading the space with an API that offers access to all the Algos of our LPs. We will also support Spot and NDFs on the LP Algos. Plus FX Algos still have plenty of room to grow and we expect to capture a large share of that opportunity. In addition, we expect Algos can go the same way as our NDF launch – clients come

to us to use Algos, see we do other things as well, try us out and like it, and ultimately increase their use of FXSpotStream.

What is driving the growth in FX Algos?

The automation of the foreign exchange market has seen a strong shift from its roots of telephone trading and voice desks to today's technological world. Algorithmic trading is another area of the FX market that has seen significant growth as clients aim to obtain a better price and execution, while limiting the risk on their part. Today, Algorithmic trading accounts for around 30% of all institutional foreign exchange trading volume and around half or more of all equity trading volume. Thus far, the demand for our Algo offering has been very strong, and we know we have an excellent offering in place to compliment these additions.



Our priority is always to make sure we are providing the best possible service for the products we currently offer

Have you grown your team to support the product growth?

Yes, and we have also leveraged the existing team. We have a deep bench of talented individuals with many years of experience in the banking sector and at other FX venues. To accommodate the Algos and Allocations offerings we have made several additions to our Support and Relationship Management teams, as well as some key additions in Sales. It was important for us to grow our support network in tandem with our product offering so we ensure that we maintain the top-quality support we are well known for. Although we are now closing in on our ten-year anniversary as a company, and have experienced tremendous growth year on year, we emphasize a small-business mentality with our team. We take nothing for granted and leave no stone unturned. We see these as vital characteristics that have allowed us to close the gap on the competition and move ahead.

How can automation help traders with volatility?

There are many considerations Algo users have when accessing Algos to trade. Among other things, users look at ease of use, reduction of market impact, better price execution, and consistency in execution. When markets are volatile, as was seen during the midst of the pandemic, all of the noted considerations come in to play to differing degrees. Add to these considerations the specific Algo selected - whether a VWAP, TWAP, FIXING, aggressive, passive, etc. In the end, it's the various considerations of a given trader and the types of Algo that continue to attract users to FX Algo execution and are driving the growth in Algo volumes. Indeed, March of 2020 at the height of the pandemic driven



It is because of our culture and the in-person team dynamic we have that allowed us to continue to operate with no disruptions

volatility, Algo execution increased and that was also in part related to the fact that the workforce was dispersed and automation ensured risk could be transferred at a time when it mattered most.

With offices across three countries, how have you managed to stay united throughout the pandemic?

Before the pandemic we were a close group across the globe travelling often between offices so people knew each other. We had the processes and procedures in place to ensure that our teams globally communicated constantly on issues impacting the Service, our clients and our banks. The pandemic altered the ability of our teams locally to be in the same room, but our cross-border communication was already in place and working efficiently. The pandemic required us to in essence apply the model we used

across countries to people working remotely who previously worked in the same location. So, the transition was seamless and transparent to our users. That said, it is because of the culture we have cultivated and the in-person team dynamic we have that allowed us to continue to operate with no disruptions and we plan to all return back to the office as we accelerate the growth of our company.

How has the pandemic affected FXSpotStream?

On the business side, we were fortunate that our business grew faster than ever before. We added clients, continued to grow our volumes and added team members in each of our offices. Notably, we were in the middle of the development of our Algo and Allocations offering. Despite the challenges from the pandemic our product roll out



Despite the challenges from the pandemic our product roll out was delayed for less than 45 days. An amazing accomplishment by a dedicated team

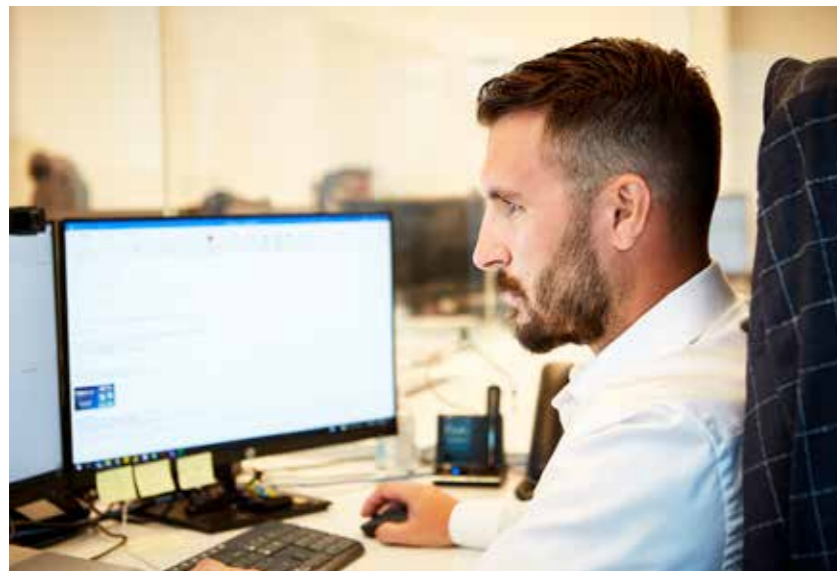
was delayed for less than 45 days. An amazing accomplishment by a dedicated team.

The activity level on our Service hit all-time highs. Around March 12th, 2020, when we saw incredible

swings in the Dow Jones Industrial Average, the order count on the Service was up 100% compared to January, and message updates were up 300%. Nonetheless, the Service was up for 100% of the time in 2020.

March 2020 saw us cross the USD1 trillion mark for the first time in company history, an achievement we have matched three times so far in 2021. Our ADV for March 2020 of USD62.378 billion remains the highest ever on the Service and the daily high on March 9, 2020, of USD89.6 billion is still our daily record.

On the personnel side, we were able to transition every staff member,

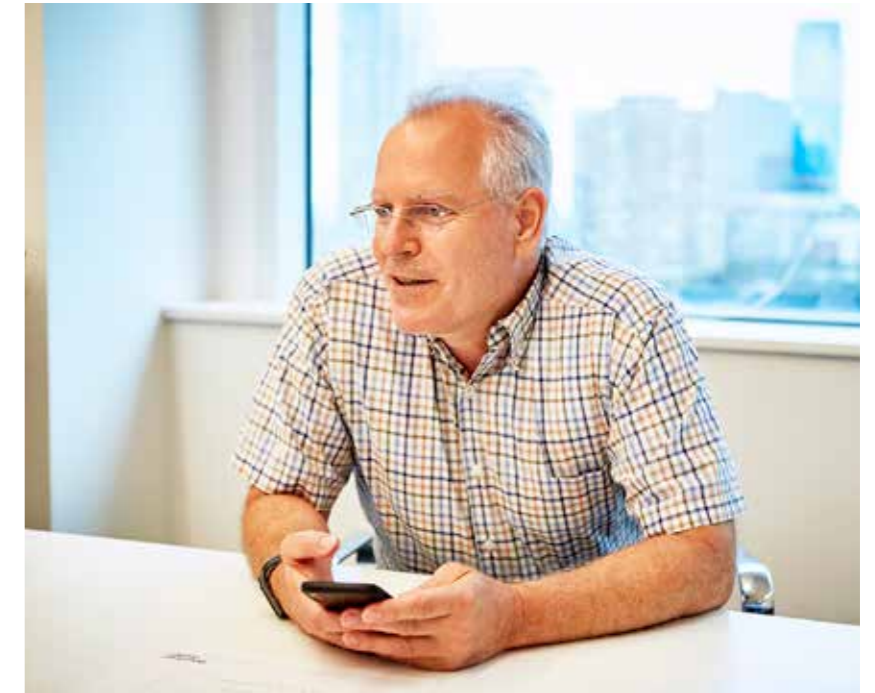


The disclosed nature of the LP and client relationship over FSS remains a significant reason for the growth in our volumes

bar two in our US and Tokyo office for contingency reasons, to work from home with no interruptions. Our US team are all back to the office and we are in the process of bringing the London and Tokyo team back. We have also managed to relocate to larger office space in all three locations in the middle of the pandemic.

You recently announced crossing the USD50 Trillion mark in terms of volume supported since going live. Congratulations.

Thank you. This was a great achievement for the team, but it also demonstrated the rapid and continued growth we have seen since the business was formed over 9 years ago. Our first 10 trillion of volume took 43 months to reach; the second 28 months, the third 18 months, the fourth 13 months (including the COVID time period) and the fifth just 11 months. This really highlights the acceleration of our growth over the years. Now as we add two vital pieces of functionality with Algos and Allocations, we are confident that



One of the core values of FXSpotStream is that we challenge ourselves continually to grow every year

the next 10 trillion will take even less time to reach.

Do you have any further launches coming this year?

One of the core values of FXSpotStream is that we challenge ourselves continually to grow every year. Later this year we will be adding Algos and Allocations to our GUI. We

also have a significant project we are working on that we will announce in Q4 that will offer even greater benefits to our clients and LPs when they use our Service.

What will 2022 look like?

We expect 2022 to continue the growth we have seen every year since 2011. Though we continue to add new products and grow our team, we maintain a strong focus on our core streaming business. Almost ten years ago we were formed offering FX Spot, only. Fast forward to today and we are the fastest growing eFX service, offering streaming of pricing in FX Spot, Swaps, Forwards, NDF/ NDS and Precious Metals Spot and Swaps.

Before adding any new functionality, our priority is always to make sure we are providing the best possible service for the products we currently offer. We are more bullish about our business today than when we started in 2011 and are excited for the future as we continue to take on more areas of the market that need our Service.



We maintain a strong focus on our core streaming business

We are more bullish about our business today than when we started in 2011 and are excited for the future



THE E-FOREX INTERVIEW

The FX Global Code: Championing global standards and best practices in FX settlement risk mitigation

By Marc Bayle de Jessé, CEO, CLS



Marc Bayle de Jessé

There has been a clear trend in FX markets in recent years: the rise in global trading of currencies that do not have payment-versus-payment (PvP) settlement mechanisms, many of them from emerging markets. At the same time, the FX community recognizes that it must continue to push for resilience, standardization, ease of access and interoperability

“We wholly support the amendments to the settlement risk principles, which rightly place greater emphasis on the use of PvP settlement mechanisms, where available.”

The FX Global Code – settlement risk principles

Principle 35: Market participants should reduce their settlement risk as much as practicable, including by settling FX transactions through services that provide PvP settlement where available. Whenever practicable, market participants should eliminate settlement risk by using settlement services that provide PvP settlement. Where PvP settlement is not used, market participants should reduce the size and duration of their settlement risk as much as practicable. The netting of FX settlement obligations (including the use of automated settlement netting systems) is encouraged.

Principle 50: Market participants should properly measure, monitor and control their settlement risk equivalently to other counterparty credit exposures of similar size and duration. Where PvP settlement is not used, settlement risk should be properly measured, monitored and controlled. Market participants should set binding ex ante limits and use controls equivalent to other credit exposures of similar size and duration to the same counterparty.

across financial market infrastructure solutions.

In parallel with this heightened focus on overall risk management, public and private side participants have become particularly concerned about rising settlement risk. As a result, the public sector and market participants have been calling for greater adoption of PvP settlement in the FX market.

One of these initiatives is from the Global Foreign Exchange Committee (GFXC), which recently published

an updated version of the FX Global Code following its three-year review¹. In particular, we wholly support the amendments to the settlement risk principles, which rightly place greater emphasis on the use of PvP settlement mechanisms, where available. We also welcome the language promoting the netting of settlement obligations, should PvP settlement mechanisms not be available.

PvP settlement, offered by CLSsettlement, is the most effective

Trusted by thousands of counterparties within the global FX ecosystem.

We make FX safer, smoother and more cost effective.

Each day we settle over **USD5.5 trillion** of payments in 18 of the most actively traded currencies globally, protecting our members and their clients from the most significant risk in the FX market – settlement risk. We do this by **simultaneously settling payments relating to FX trades using our unique payment-versus-payment (PvP) system.**

Recent public policy initiatives, such as the Financial Stability Board’s Cross Border Payments Roadmap and the updated FX Global Code, acknowledge the need for greater PvP adoption.

CLS is uniquely placed at the center of the FX industry to work in partnership with the public and private sector to develop a PvP solution that will address settlement risk for a wider range of currencies and market participants.

Find out more about how we are supporting the FX ecosystem: cls-group.com



**Future focused
FX settlement**

CLS
trusted market solutions

¹ The Global Foreign Exchange Committee endorsed the outcomes of the Code review on 28 June 2021 https://www.globalfxc.org/docs/gfxc_3year_review_outcomes.pdf.

“To address the issue of mitigating settlement risk for currencies not supported by CLS Settlement, we are working with our settlement members to evaluate market demand and the viability of potential PvP solutions.”

way to mitigate FX settlement risk as it enables both sides of an FX trade to be settled simultaneously, eliminating the risk that would exist if one party to the trade delivers the currency sold but does not receive the currency it bought from its counterparty. Without PvP, counterparties must rely on non-PvP settlement arrangements such as bilateral gross settlement which may leave counterparties exposed to significant settlement risk.

For currencies that are not currently eligible for PvP protection, which include many emerging market currencies, the netting of FX payments, particularly if conducted via an automated netting system, can provide significant risk mitigation and efficiency benefits.

By using a bilateral payment netting calculation service for FX trades, such as CLSNet, market participants can calculate net payment amounts directly with full automation in a standardized

“We believe that implementing global standards and best practices in the FX market to mitigate settlement risk further is best achieved through close collaboration between the public and private sectors.”

central process with their counterparties before settling through the correspondent banking system. At present, many market participants manage bilateral netting calculations and agreements via email and phone which is fraught with the operational risk associated with these manual processes.

In addition to the recent changes to the FX Global Code, there are other public policy initiatives to encourage PvP adoption in the FX market. The inclusion of building block 9, “Facilitating increased adoption of PvP” and related action items in the Financial Stability Board’s/CPMI’s Cross Border Payments Roadmap is another good example of this.

Other initiatives are focused on obtaining a clearer understanding of the true scope of FX settlement risk in global financial markets, such as the potential inclusion of questions about settlement practices in the FX turnover surveys conducted by local FX Committees. Meanwhile, the Bank for International Settlements has requested more granularity in the information on FX settlement practices for its 2022 Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Markets, and recently published reporting guidelines².

With this in mind, CLS is leading a detailed data analysis with a group of global settlement members to better understand settlement risk for currencies that are not currently eligible for CLS Settlement and how FX trades are settled in those currencies. The initiative is due to be completed during 2021 and will enable us to validate findings, produce aggregated, anonymized data points, and contribute the combined findings and conclusions

towards a range of key policy initiatives as the results should provide better data on settlement practices.

Further and to address the issue of mitigating settlement risk for currencies not supported by CLS Settlement, we are working with our settlement members to evaluate market demand for and the viability of potential PvP solutions.

We believe that implementing global standards and best practices in the FX market to mitigate settlement risk further is best achieved through close collaboration between the public and private sectors. The recent updates to the FX Global Code, which were achieved through consultation of local FX committees and market participants, is a perfect example of this approach.

At CLS, we will continue to support the FX Global Code objectives regarding mitigating settlement risk in two ways: through exploring alternative PvP designs which will provide access to PvP settlement for currencies that are not currently eligible for CLS Settlement, and by further expanding access to CLSNet, our automated and standardized bilateral FX payment netting calculation service.

Now more than ever, the implementation of best practices related to mitigating settlement risk and efficient post trade practices in the FX markets is a high priority for market participants, policymakers and regulators. By working with the industry and policymakers on these initiatives, CLS will be supporting industry best practices and standardization while mitigating risk and reducing cost for market participants.



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² BIS: “Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Markets Reporting guidelines for turnover in April 2022” (May 2021). [bis.org/statistics/triennialrep/2022survey_guidelinesturnover.pdf](https://www.bis.org/statistics/triennialrep/2022survey_guidelinesturnover.pdf)

Optimizing FX STP through intelligent automation

By Udai Abburi, Director, Enterprise Solutions and Yash Gupta, Business Analyst at ION.



Udai Abburi



Yash Gupta

Today's digital and data-driven economy has placed an ever-increasing range of challenges on FX market participants. Technological advancements make it imperative that organizations re-think traditional business models, particularly addressing their digital performance and capabilities.

Customers' demands have evolved to expect faster, more personalized and reliable digital services. In addition, the COVID-19 pandemic and its fall-out has accelerated global digital transformation efforts. Despite this shift, FX operations within these strategies are often overlooked. FX operations must be seen as a crucial enabler of innovative digital products and services. Once optimized, FX operations can enable organizations to meet customer demands and expectations, by allowing highly automated, real-time, and insights-driven operating models.

As Artificial Intelligence (AI) and Machine Learning (ML) methods continue to develop, various rapidly evolving solutions have the potential to add intelligence to automation and take FX operations to unprecedented levels of efficiency. In addition to boosting straight-through processing (STP) rates, these methods can provide actionable insights that increase clarity and control, while catering to customer interactions and alleviating regulatory concerns. The democratization and adoption of AI and ML will continue to drive best practices, levelling the playing field across FX market participants.

STRAIGHT-THROUGH PROCESSING (STP)

The FX industry has made significant strides with respect to automation of operations, often achieving relatively high rates of STP within specific segments and corridors. Most notably, around wholesale FX and

where CLS is employed, ensuring settlement finality.

As FX operations have become more complex, market participants today face an increasingly diverse set of market forces, such as a new competitive landscape through the emergence of challenger banks and non-bank FinTechs, increased FX market fragmentation, trading volumes, and complexity of products, necessitating greater operational processing capacity. Ongoing regulatory and compliance changes continue to drive new workflows and require conformance both now and in the future.

Furthermore, the transformation of cross-border payments, rapidly converging on real-time payments, has emphasized the need for more sophisticated automation, with accurate real-time processing and intraday liquidity management. Traditional automation, integration patterns, and APIs are well understood and should be employed in various areas to derive benefits. Notwithstanding this, more can be done to increase STP rates and evolve towards intelligent automation.

AI AND ML – A NEW REALITY FOR FINANCIAL SERVICES

The remarkable rise of applied AI over the past decade has enabled computer systems to mimic human-



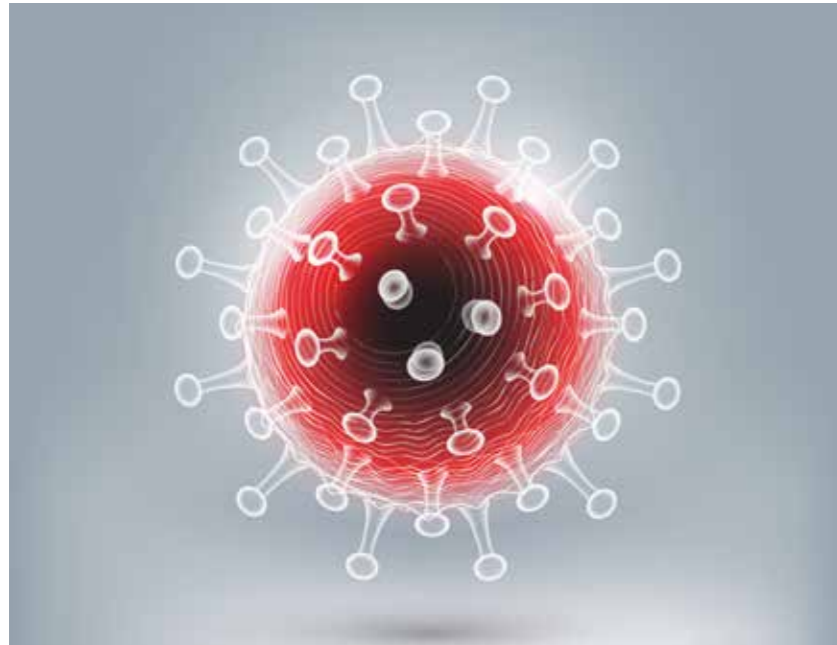
```

elif_operation = "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

#selection at the end -add back th
mirror_ob.select= 1
modifier_ob.select=1
bpy.context.scene.objects.active = mod
print("Selected" + str(modifier_ob)) #
mirror_ob.select = 0

```





The COVID-19 pandemic and its fall-out has accelerated global digital transformation efforts

like performance. In particular, the subfield of machine learning has the potential to add 'intelligence' to automation and further streamline FX operations, and such methods are increasingly becoming a reality for market participants.

While AI is a broad discipline of study, the focus is on 'weak AI' – or applied AI – defined as the use of computer intelligence within a defined task. ML is best thought of as a specific set of tools within weak AI, which entail

the use of computer algorithms to automatically optimize mathematical models from data without explicit programming. The optimized model can then generalize and provide predictions against new data.

ML encompasses other cognitive technologies too, such as computer vision and natural language processing. Deep learning, a further subset within ML, structures mathematical models across multiple layers of nodes, mapping inputs to



Machine Learning has the potential to add 'intelligence' to automation and further streamline FX operations

outputs in various combinations. This architecture is thought to mimic the structure of neurons of the human brain, giving rise to the term 'neural networks'.

Such techniques, accelerated by the explosion of data, computer capabilities and algorithmic innovations, are very successfully being adopted by 'big-tech'. Furthermore, a wide range of open-source packages and cloud services are now readily available, democratizing the use of these ML solutions.

ADDING INTELLIGENCE TO STP

ML can be applied to the transaction processing lifecycle, to add levels of automation and efficiency that cannot otherwise be attained through conventional methods alone. In addition, ML offers the ability to extract meaningful insights and provide recommendations. Specific examples of ML applicability are discussed below.

Payment fraud prevention

ML can augment traditional rules-based processes in preventing fraudulent activity and/or allow for detection of anomalous activity. When clearly categorized and labelled historical fraudulent and non-fraudulent data is available, a binary classification model can be trained and used to identify fraudulent activity in real-time when presented with new transaction data. As access to labelled data may not always be available, more sophisticated unsupervised learning techniques based on probability densities are available to detect anomalous behaviour. Historical payment data can be used to 'learn' normal behaviour, which can then be used to detect deviations from this learned normal behaviour.

Nostro forecasting

Advancements in domestic and cross-



The transformation of cross-border payments, rapidly converging on real-time payments, has emphasized the need for more sophisticated automation

border payments have necessitated proactive intraday liquidity management and funding. As a result, there is increased emphasis on real-time cash flow forecasting. ML based cash flow forecasts can supplement conventional forecasts. Cash flows can be treated as time series data and ML methods can be applied to predict future values of the time series. Classical techniques such as ARIMA are well established, and more recently deep neural network architectures for time series analysis and predictions have also gained traction.

Predictive payment analytics

The use of predictive analytics in the payments space has the potential to offer a streamlined experience, while significantly improving customer experience. Payment failures remain commonplace and often result in significant costs. Primary points of frictions can be alleviated by applying payment data capture validation to ensure all country specific rules are met and to validate beneficiary account details. In this regard, interoperability initiatives around ISO 20022 and payment data validation under SWIFT gpi are commendable. ML can further

supplement conventional solutions and offer predictive capabilities around settlement failures prior to payments being sent, and such insights can be used to trigger additional manual scrutiny.

In relation to payment routing options, expected time to settle and anticipated total cost, recommendations can be provided to customers that not only factor in a customer's stated preferences, but also consider historical transactions and past selections, to suggest optimized payment routing options. These models can also be collaborative, to allow for collective input from various customers, to better drive recommendations for the benefit of all.

Confirmation matching

The affirmation and confirmation processes remain significantly human intensive areas of back-office processing. While rules-based confirmation matching applications are widely used, paper-based confirmations and the matching thereof present time-consuming manual operations. Certainly, techniques such as QR codes on outbound confirmations and using

these to look up transactions have benefits here. Computer vision can also be applied to extract data from incoming PDF confirmations and used in an automated matching process.

Rules-based systems often require human intervention to manually deal with partial matches and establish additional rules on an on-going basis. ML can automate the suggestion of additional rules. More advanced techniques include entity resolution (or record linking) algorithms to derive matches, as an alternative to fuzzy matching logic. Finally, unsupervised learning techniques applied to incoming confirmation data have the potential to uncover previously unknown patterns and inform additional matching rules.

Reconciliation

Reconciliations, such as nostro reconciliations, are heavily rules-based. Nostro reconciliation deals with the reuniting of actual cash movements as depicted on an external statement with the recorded projected cash movements. Timely reconciliation and the use of automated processes are essential for optimizing liquidity and informing funding. As such, there

Optimizing FX STP through intelligent automation

is growing interest around how ML methods can supplement rules-based applications. Here too, techniques such as entity resolution algorithms and uncovering previously unknown patterns in the data can be beneficial in further augmenting traditional methods.

HARNESSING DATA

Obtaining business critical insights and value from data requires ready access to curated, processed, trusted and quality data for ML and AI solutions to work effectively. Enterprises have traditionally relied on batch processing with analytics segregated from transactional applications, as is often the case with enterprise data warehouses. This is rapidly changing, with greater emphasis on streaming technologies and ML driven predictions wherein outcomes can readily be visualized or utilized directly within the context of the transactional applications and in real-time.

Fragmentation of data across various solutions and business areas is one of the biggest challenges towards the availability of clean, consistent and high-quality data. Therefore,

investing in flexible yet secure data and interoperability architecture with streaming capabilities is key. The data architecture must support consolidation of data and adopt best practices around master data management, metadata management, model management, data discovery and data lineage. As ML requires large volumes of high-quality data for training to generate an optimized model through an iterative process of scoring and evaluation, data pipelines must be consistent across the complete ML development and deployment paths. This ensures equivalence between production data features and those used to train the models. ML models also require periodic retraining to make best use of new data and to prevent model decay over time.

THE RECIPE FOR SUCCESS: ADAPT AND ADOPT

As a specialized discipline that brings together computer science, mathematics, and statistics, ML requires collaboration across data scientists, data engineers, domain experts, and conventional development teams. A robust data

and technology architecture strategy is needed to derive maximum benefits.

The explosion of cloud computing in recent years has allowed for many technology paradigms available as a service. These advances have greatly democratized technology and have the added benefits of reducing capital expenditure and lowering total cost of ownership. Applied AI has come of age and has practical benefits that can unlock business value by lowering operational costs and driving additional revenue growth. An effective, proactive approach is best considered as part of an over-arching business transformative strategy with emphasis on solving real-world business problems and delivering value through constant customer engagement.

While some areas of automation boost STP, ML has the potential to transform operations more broadly and drive intelligent automation. When democratized, the maturity and sophistication of ML has the capability of furthering all industry players, regardless of size, location and current industry standing. Additional areas, which have been highly successful within the big-tech platforms and which can be applied to FX, include personalization and recommendations, conversational AI in communications, customer churn predictions and document processing.

In today's digital environment, continuous innovation must be embedded into the fabric of how an organization operates. The core systems and data architecture must be flexible to accommodate a future that continues to evolve at pace. The resulting business agility allows for tackling the constant and competing pressures from customers, regulators, and shareholders alike.



The democratization and adoption of AI and ML will continue to drive best practices, levelling the playing field across FX market participants



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Beyond Bitcoin:

Discussing the benefits of other cryptocurrencies

By Sergei Grigoriev, Executive Director, Eurotrader



Sergei Grigoriev

Cryptocurrency is a constantly evolving financial service, currently gaining more traction than ever within the trading world. After an investor accidentally 'threw away' their millions in Bitcoin, followed by its plummet in value after Elon Musk's announcement that Tesla would no longer accept it as a payment method, 2021 has already seen its fair share of virtual payments making the financial headlines.

Bitcoin might be the currency getting all the coverage and leading the market in popularity and active investors, but there are plenty of other lucrative virtual payment platforms and currencies to be aware of that are only growing in popularity. Ethereum and Litecoin have too gained traction among traders and, although currently lagging behind Bitcoin, they are showing no signs of slowing down. This article explores some of the benefits of alternative cryptocurrencies

and key considerations for finding the right investment.

BUILDING ON BLOCKCHAIN

Most cryptocurrencies run on a decentralised ledger, called a 'blockchain'. The clue is in the name when it comes to how blockchain operates. Data comes together to form a block, which is added to the ledger, joining other 'blocks' to form a chain. This process enhances transactional security, as each new activity is encrypted using previous data plus the new sequence, creating unique signatures. Hosting transactions over the blockchain also has a positive effect on hacking security as no one actually 'owns' or controls the technology or the platform – rather, users all have an element of shared control. It is a peer-to-peer electronic transaction system.

WHY ARE CRYPTOCURRENCIES SO DESIRABLE?

Much like its common blockchain host, cryptocurrency is attractive for its cybersecurity credentials. There is no trust involved, as no one else controls and holds your stock. Although we've all heard the news of people accidentally 'throwing away' their crypto, there is actually no tangible currency to lose or misplace, removing one of the risks of physical cash.

Much like the security risk aversion, you're also removing the transaction fees associated with cash investments

by 'cutting out the middle-man'. In traditional financial transactions, there are several steps between money sent and money received – and these steps can be costly.

Brokerage fees and commissions are just a few outgoings that businesses and consumers come to expect when investing or transferring substantial sums. However, the direct nature of crypto transfers eliminate these third-party or middle-man fees. Transactions are seamless and instant and, unlike traditional investments, what you see is exactly what you get.

BUILT FOR MODERN TRANSACTIONS

The financial landscape is constantly growing and evolving, and currencies and transfer systems must be able to keep pace.

Speed and scalability are among crypto's key benefits and are completely individual to each virtual currency. Bitcoin boasts an ability to process seven transactions per second, and Litecoin is even faster, at a maximum of fifty-six transactions per second.

Much like traditional transactions, there is always a limit to what is possible. However, using crypto to transfer significant funds is ultimately faster than traditional transfers or currency conversion, as the nature

Beyond Bitcoin: Discussing the benefits of other cryptocurrencies

of a digital currency lends itself to automation and efficiency.

Small payments through debit and credit cards may operate faster than cryptocurrency can, but for larger transactions – like those typically expected of financial investments – the blockchain processes funds at increased speeds. And this is not to mention the simplicity of the transaction compared with manual alternatives.

THE FUTURE OF ONLINE PAYMENT

Since its creation over a decade ago, Bitcoin has been the most heavily discussed cryptocurrency, but more than ever, we're seeing the emergence of new, alternative currencies. This may be attributable to traders aiming to diversify their crypto portfolio. They will invest in more than just one or two types of currencies – the nature of crypto stocks causes fluctuation, so holding a long position on just one currency leaves traders at risk of losses.

As investment has taken off, it has driven up the supply and diversification of the cryptocurrency

market, with an increasing number of traders looking to tap into the rewards on offer from becoming an early investor. Plus, as the nature of crypto as a digital currency lends itself to online transactions, this demand is only set to increase, with virtual currencies poised for ubiquity, not just for ambitious investors, but in daily life as a legitimate payment model.

REPLACING CASH, OR WORKING TOGETHER?

It may seem obvious, but there are considerable pros and cons to both cryptocurrency and cold, hard cash.

As it stands, it's inconceivable that crypto could ever completely replace cash, if not for the simple reason of convenience. There is no physical way to transact, like with a debit card or Apple Pay, for example. The transaction speed of crypto is, although impressive for larger-scale payments, not nearly quick enough for day-to-day cash exchanges.

Then, there is the additional hurdle of gaining widespread demand and traction among the general public to make crypto a sole financial reality.

However, the scalability of cryptocurrency is significantly more attractive than traditional cashflow. This is where crypto provides the real-world convenience that makes more widespread adoption a possibility – providing benefits beyond just those available to clued-up investors.

While cryptocurrencies may not currently be able to replace existing currencies, it seems they could work harmoniously in providing different payment benefits for consumers and businesses, for whom speed and convenience is a necessity.

Payments solution giant Visa now partners with a number of companies (including the likes of PayPal, Coinbase, BitPay and Binance) to instantly receive converted crypto to be spent as fiat currency at all Visa-supported businesses. Visa, being a market leader in processing crypto transactions, is now even settling funds for these merchants in stable coins.

BEYOND BITCOIN...

Currently, Bitcoin is strides ahead of other cryptos in terms of its popularity in active investors and market cap, which currently sits around \$1 trillion. This is not to say other currencies are not catching up though, with the popularity of alternative digital currencies now higher than ever. Ethereum is Bitcoin's closest competitor, with a market cap of \$500 billion.

Since Bitcoin's launch in 2009, the creation of other digital currencies has been consistently increasing. Some are completely different to Bitcoin in terms of their functionality and operation, whereas others are simply a similar product but tailored for specific functions.

Take Ethereum, for example. While it uses the same blockchain ledger as



There are considerable pros and cons to both cryptocurrency and cold, hard cash

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TOOLS FOR BROKERS

Beyond Bitcoin: Discussing the benefits of other cryptocurrencies

Bitcoin and has many aligning benefits in decentralisation and security, the system itself is different and operates as such, with one added benefit of Ethereum being its speed.

Litecoin, on the other hand, is modelled similarly to Bitcoin. As its name suggests, it is simply a 'lighter' version of the reigning cryptocurrency – sometimes referred to as the silver to Bitcoin's gold.

There are, however, cryptos that run on alternative systems and differ more significantly from Bitcoin. Take Ripple, for example. This is a centralised crypto that is often a platform used for global monetary exchange, with the aim of making these transactions instant and cheap.

Generally, cryptocurrencies eliminate the extra time and cost to payments and make them free of governmental regulation – however, Ripple is one of the exceptions, as its most common use is by banks and other intermediaries.

DIVERSIFYING YOUR PORTFOLIO

So, if you want to look beyond the realm of Bitcoin, where do you turn? It's clear that in the last decade particularly, the digital currency market is expanding and evolving at a rapid pace but identifying the right investment can be harder than ever, either as an experienced investor or a first-time trader. The natural first step is looking at the unique benefits provided by each currency. For example, those opting for advanced scalability and an intensively secure network will likely turn their attention to Ethereum.

Ethereum's decentralised ledger is valued for its impressive security, relying on two separate verification processes, Smart Contracts and 'dApps'.

Other alternatives to Bitcoin boast their own unique benefits. Litecoin,

for example, is incredibly scalable and efficient. Transactions are up to four times faster than Bitcoin, and its scalability of up to 56 transactions per second is faster than that of Bitcoin and Ethereum put together.

Litecoin is cheap and transactions are fast, which no doubt appeals to a particular sector of the trading market.

WHAT ARE THE DRAWBACKS OF OTHER CURRENCIES?

While there are plenty of emerging cryptocurrencies boasting many benefits to potential traders, it's hard to ignore the fact that Bitcoin remains the most popular and attractive option to investors.

This is simply because it was the first digital currency, meaning it is the most widespread and trusted cryptocurrency. Not only is Bitcoin's blockchain ledger now a trusted and widely accessible infrastructure, but Bitcoin has the largest userbase and most use cases – making it the biggest crypto draw, with the highest potential prices and rewards on offer. It is for these reasons that alternative currencies are struggling to keep pace and make the same impact seen by Bitcoin as the ground-breaking first foray into the cryptocurrency sphere.

CHOOSING THE RIGHT INVESTMENT

All cryptos have their drawbacks and benefits. What traders need to ask themselves is what they are looking for in their investment and how much risk they're willing to accept in search of reward. It's difficult to say whether one digital currency is simply better than any other, but investors can always make this decision based on what is the most relevant for themselves and their ambitions. Over the last decade, the range of crypto on offer has boomed, giving traders more autonomy in their choices.

Research is key to any investment, though – regardless of trading experience – and those looking to expand into the cryptocurrency market, or simply diversify their existing portfolio, should work with an expert for peace of mind over a successful and secure trading career.

ENGAGING WITH CRYPTOS VIA CFDS

As an alternative to buying the currency, some traders and trading platforms opt for CFDs (contract for differences). Instead of owning the stock or asset itself, you speculate on the market's movements. If you correctly predict the market direction, whether this be the rise or fall, you can earn money without actually needing to buy into the asset itself.

The growing interest in crypto has given rise to CFD trading among retail traders. With CFDs, traders can tap into the volatile crypto market. What's more, it provides an opportunity to be more responsive towards market news and act on market sentiment following events such as, for example, China's crackdown on cryptocurrencies. The high volatility has led to crypto CFD trading attracting traders who usually engage with other markets. Cryptocurrencies are also subject to more exponential trends than, say, forex trading. This heightened interest has led to more CFD trading platforms and retail brokers offering cryptocurrency trading pairs. Traders can trade crypto-fiat pairings, such as Bitcoin Cash USD (BCHUSD) without the need for a crypto wallet or ownership of cryptos themselves.

Another longer-term option is to trade stock CFDs of companies that are closely associated with crypto trends, such as Coinbase, PayPal, Square and Visa. This provides another avenue to engage with crypto activity without having to purchase a physical coin.

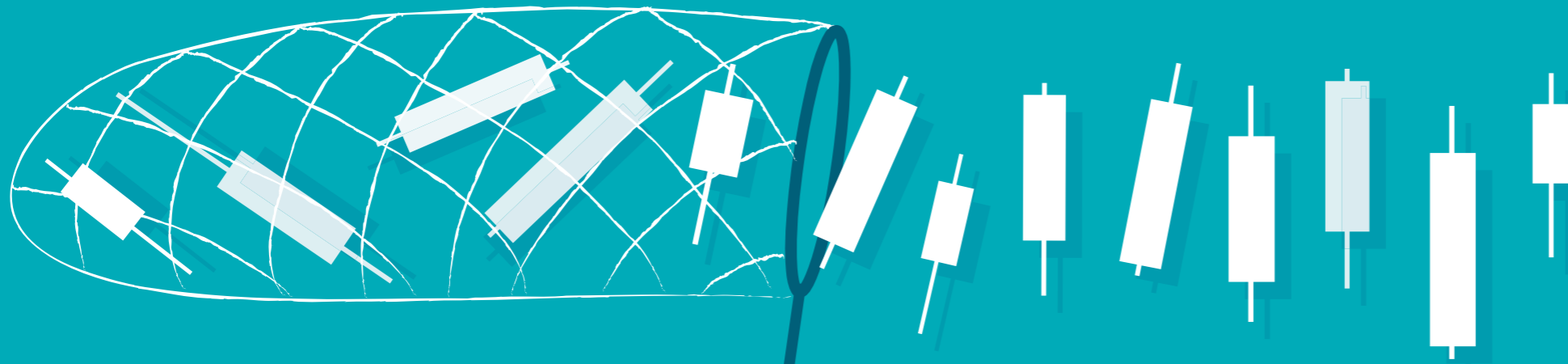
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Data dominates Buy-Side approach to FX Trading

By Ivy Schmerken, Editorial Director, FlexTrade Systems



Ivy Schmerken

Senior buy-side traders offered differing views on the definition of high-touch and low-touch trading in foreign exchange (FX) at a roundtable in May, shedding light on efforts to rank their brokers and incorporate data analytics into their decisions. Discussing their usage of FX electronic trading protocols and algorithms for “chunkier trades,” buy-side heads of FX and derivatives trading desks, shared their views on a roundtable in May moderated by The Hive FX Network and co-hosted by FlexTrade Systems.

With liquidity provided by banks, dealers, and venues, buy-side FX

participants explained how they rely on pre-trade analytics and either internal or external transaction cost analysis (TCA) services to benchmark their trades and evaluate pricing from their brokers. Deciding whether to go low-touch or high-touch is predominantly driven by the individual currency pair, size of order, time of day, and whether the currency is deliverable or a non-deliverable forward (NDF), or whether a trade can go through algos, according to several buy-side FX traders who represented large investment management firms.

Though high-touch trading will always exist for block trades, several FX buy-side traders said they are taking steps to bring more automation into their workflows. Large asset managers are inundated with hundreds upon hundreds of tickets from mutual funds and segregated mandates – the majority of which are in liquid currency pairs.

“The majority of our flow is through the RFQ (request for quote,) so it’s really trying to automate that flow first and then looking at algos,” said an FX roundtable participant.

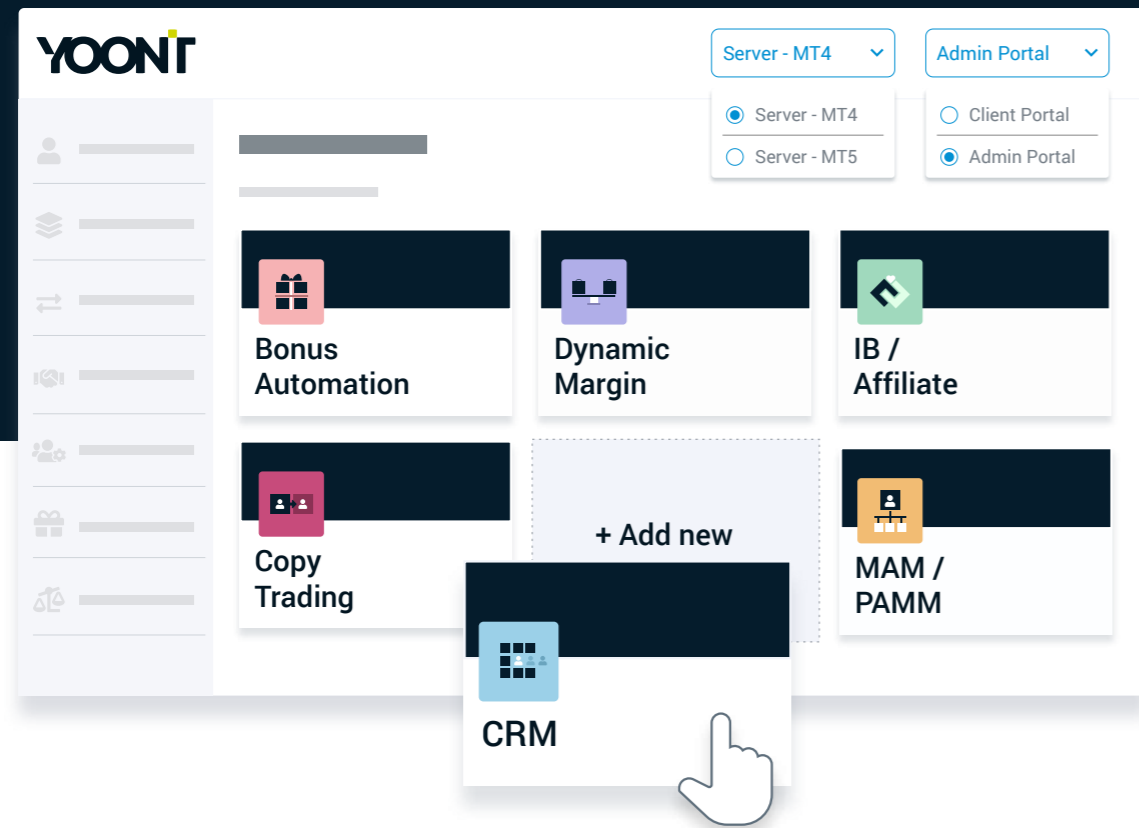
However, the definition of low-touch versus high-touch trading varied across the spectrum of investment shops based on the level of internal analytics, technology, and views on automation. One sophisticated large asset manager defined low-touch trading as using request-for-quote (RFQ) to receive firm prices from liquidity providers, whereas anything that a trader had to touch or exercise discretion on – such as an algorithm – was considered high touch.

Traders also consider the portfolio manager’s sensitivities when deciding how to execute. “We do have certain patterns that they insist on having their trades executed by a trader and don’t want to use algos,” said a roundtable participant.

Another firm built an internal “RFQ wheel,” an analytical tool to help decide where to go with their trades. A participant on the equity and FX side, said it was up to the traders’ discretion whether to execute electronically or use RFQs. In another firm’s case, most FX trades were low-touch and handled through either an internal messaging bus infrastructure

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or algos, while most NDFs required high-touch.

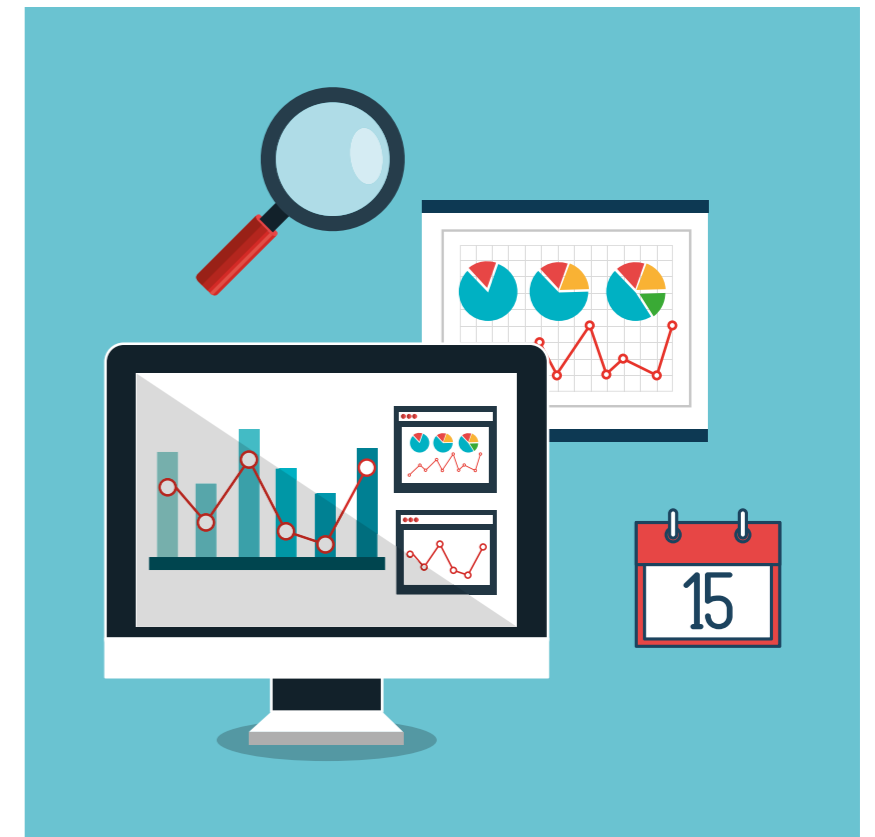
CHALLENGES WITH PRE-TRADE & TCA

Demand for data particularly for pre-trade analysis in FX was a key theme, with many on the buy side using internal analysis to divide trades into different buckets by price, size, and currency pair, then ranking their brokers' performance. For example, one firm had an advanced analytics team building an internal liquidity monitor taking in external data sources and historical quotes. Data-driven decision making was seen as key to removing the buy-side trader's bias in sending flow to brokers. "We're really working hard to get data as close to the point of execution as we can," said a member of a TCA team at a large asset manager.

But a Greenwich Associates study on algorithmic trading published in February found that less than half of the buy side is using TCA benchmarks, "and even fewer use the sophisticated TCA systems that have served as an accelerant for algos in other asset classes," according to a summary of the report.

Although pre-trade cost data and TCA are available from dealers, this is often inefficient because the buy side needs to access it on multiple single-dealer platforms. The hassle of logging into different bank pre-trade platforms resulted in one buy-side firm infrequently using this data.

Firms also said they were struggling with how to integrate pre-trade and post-trade into their processes. With so many algos in FX, it is "difficult to gauge the true pre-trade cost model," and there are "big deviations across the different bank platforms," according to a buy-side FX participant. One of the hurdles for FX TCA is the



Reviewing trades executed six months ago could penalize a broker for past performance or liquidity conditions

lack of trade disclosure in FX and this means FX market participants do not have access to a consolidated, universal data on pricing and execution that feed algorithms in equities, and hence make it easier to benchmark trades, noted Greenwich. "The FX market has fragmented liquidity, so it is difficult to use equity-market oriented measurement tools for TCA, which requires comparing apples with apples," commented Howard Tai, principal at Frontline Global Markets LLC, an expert on buy-side foreign exchange and equity derivatives risk management topics, in an interview.

"The whole concept of a central limit-order book doesn't exist in FX market structure," said Tai, adding "It's a series of large and small pools fragmented everywhere." The pricing is not uniform because the FX market is based on bilateral trading where the prices depend on the buy-side relationship with the banks, dealers, and other liquidity providers,

Tai noted. "Price depends on your volume, your credit worthiness, and what other parts of your firm does business with their firm that touches each other. That is all part of the relationship," said Tai.

On the algo front, Tai said that "some of the heaviest volumes of algo usage by large buy-side firms are conducted in in single-dealer platforms because of their relationships over many years with the money-center global banks." From a TCA benchmark standpoint, they are not spreading their liquidity out to different environments like multi-dealer platforms and ECNs. "The disadvantage is they don't see the aggregated market," he said. If they are using a volume benchmark, it is limited to the volume they are seeing in the single dealer pools.

CLASSIFYING FX TRADES

During the roundtable, one FX buy-side trader explained how the desk grabs the historical quotes via request-for-stream feeds – "both winners and



Providing more targeted feedback to the sell-side has resulted in tighter spreads, according to the buy side

losers” — from two-sided markets — and transfers them to an internal database. Next, it breaks each trade into three components – spot trades, spot risk, and forward points risk under a week. Classifying trades into different buckets, it analyzes spreads that dealers have shown to the firm, and creates tiers for its brokers by currency pair, by trade type, and other metrics. In order to randomize the broker selection process, the buy side can pick a certain number of dealers from each bucket. “So, if you have a higher tier, you have a higher chance of seeing a trade,” said an FX buy-side trader.

The buy side’s method of ranking brokers could control the odds of their seeing trades based on historical performance. Reviewing trades executed six months ago could penalize a broker for past performance or liquidity conditions, whereas looking at the more recent period of three months ago would acknowledge their improvement.

Providing more targeted feedback to the sell-side has resulted in tighter spreads, according to the buy side. Instead of being priced in a generic way, “there are discrete ways in which the dealers can adjust pricing whether it be by currency, or size, or combination of factors,” said a roundtable participant. In turn, dealers get feedback on their precise percentile rank and how many trades they are seeing.

AUTOMATION: VARYING DEFINITIONS

While FX traders spoke about automating their smaller trades, it was unclear how they defined automation. For example, one trader said she was sending RFQs out by currency pair but is looking to apply automation rules for low-touch orders so that RFQs could be sent out automatically. Another trader used an auto-ex capability via FX Connect for small orders in the most liquid currency pairs such as euro-yen or euro-

sterling, sending them all at once, but bigger trades outside of G-3 currencies such as Mexican dollar or Turkish lira are sent through algos. In the latter case, the firm has no systematic or quantitative way of determining what is the best choice of broker algo other than go on “gut feel” or what they did in the past.

Given that each trader has their own biases, manually selected brokers is not regarded as a value add. “If a trader goes in and selects five brokers for a 3 million Eurodollar, (based on who they think is good or bad), that is not a value-add,” said one buy-side trader. The goal is to turn those smaller trades into one-touch executions which can be executed as a basket trade to free up time to focus on larger blocks or answer a portfolio manager’s questions, said the same buy-side trader.

The biggest takeaway from the roundtable is that data is critical to deciding how and where to execute FX trades, and this includes both internal and external data sets from third-party providers and peer-data from other buy sides.

“It’s more about using systematic assessment of spreads and hit ratios so that we can create a tiering of our banks, essentially using data to eliminate bias and provide feedback to banks, and ultimately to inform our future execution decisions,” said a roundtable participant.

Focusing on the next 18 months, several buy-side FX traders talked about the potential for algo-wheels in FX to help quantify their choice of broker algo and incorporating “peer data” from other buy-side firms into their TCA. But the ability to integrate these data points into a common technology framework is still a work in progress.

Open banking - Why it is set to transform FX

Open Banking is seeing rising adoption especially among countries with strong digital and mobile payments uptake. We asked Ryan Liew, Business Development Consultant at Payment Asia, a leading e-payment technology and e-business management provider to tell us about how he thinks it might transform the FX market over the coming years.



Ryan Liew

Why is Open Banking becoming so popular around the world and what key advantages does it have?

The Open Banking idea presents advantages for 3 key stakeholders within the financial ecosystem:

- 1. Customers - more choices and better banking experience.**
According to the Millennial Disruption Index, 71 per cent of young people would rather go to the dentist than listen to what their banks say. With Open Banking, it allows players within the industry to compete on a more equal footing. Healthy competition promotes innovation, better service and banking experience for the customer, making banking services faster, cheaper and better.
- 2. Banks - growth opportunities and accelerate adoption of digital technologies.**
The Open Banking initiative requires banks to share customer’s data

with third-party fintech applications but it is also an opportunity for banks to expand their product distribution channels beyond what they can do now. In the last decade, banks have been spending most resources on regulatory compliance while big tech firms like Google, WeChat and Amazon have captured the mindshare of the users. By co-creating with fintech companies, banks can accelerate digital transformation and recover the “lost decade”.

- 3. Fintech companies - new markets with growing potential.**
The new regulation has invited competition for the banks, allowing fintech companies to build innovative applications and access to serve over 300 million customers in EU and UK. Without the burden of legacy systems, fintech companies are in prime position to capture the future of banking services using the latest technologies.

Lockdowns have forced users to transact online and service providers to reposition their distribution strategy to online channels



How is new legislation, for example PSD2 in Europe (the Second Payment Services Directive) acting as a catalyst for Open Banking?

PSD2 is the EU-version of Open Banking in the UK which allows customers to now compel banks to share their data with 3rd-party

Open banking – Why it is set to transform FX

providers (TPPs) to make payments, obtain loans, compare prices etc. When we combine Open Banking and PSD2, TPPs can now build applications to pull that data from the bank’s database across EU and UK markets. This opens up a whole new world of exciting opportunities to build cutting-edge products and improve banking services, in line with customer expectations.



A frictionless and instant payments experience goes a long way in winning and retaining customer loyalty

In what ways could the COVID-19 crisis have accelerated the drive towards Open Banking?

One of the silver linings of the global pandemic is unprecedented growth in the history of digital payments. Lockdowns have forced users to transact online and service providers to reposition their distribution strategy to online channels. These investments into digital channels will be here to stay post-Covid now that users have embraced online payments as the new normal.

FX is a global business with banks and brokers having customers in many different countries. In what ways can Open Banking help them to overcome the challenges of servicing their clients digitally across multiple jurisdictions?

Previously, banking has always been a “physical” affair where customers need to visit a bank’s branches for their banking needs. Once they go digital, banking services are no longer limited by the working hours or availability of bank tellers and branch locations. For example, a traveling UK person can make payments to his European vendor while transiting at Dubai airport or an FX investor living in Singapore can fund his foreign broker’s USD account at midnight via TPP’s mobile app. When more countries adopt Open Banking, it enables banks to serve their global customers anytime, anywhere without

boundaries at a fraction of the cost when compared to offline channels.

How can Payment Asia’s Open Banking solution help FX trading providers to lower their payments costs, improve their cash flows and reduce fraud?

The Payment Asia Open Banking solution reduces transaction time between customers and FX trading providers to within seconds. Instant payment means instant cash settlement, shortening the cash cycle to intraday and improve overall cash management positions for the service provider. The Payment Asia solution is focused on instant bank transfer with biometric authentication. With debit and credit card payment methods, fraudulent activities are more rampant and are less popular in emerging markets when compared to bank transfers.

Relationships are very important in FX trading. In what way does Open Banking have the power to strengthen these?

In the digital world, relationships are defined by how well you deliver your service faster and better than your competitors when they need you the most. Payment Asia’s Open Banking solution redefines the way

we move money to within seconds at your fingertips. This is an extremely powerful proposition for FX trading because FX is a volatile and time-sensitive market. A minute’s delay in moving your funds into your trading account could result in lost trading opportunities. After putting the customer through the hoops of KYC, you do not want to lose the customer by introducing more friction when they deposit funds.

In what ways is new technology being integrated into Open Banking environments to put payment transaction data to work which can help FX trading providers gain more actionable insights from their client activity?

When transaction time is reduced to seconds, it will generate more actionable data for FX providers to respond immediately, for example:

1. Are there any patterns that we can see from the transaction data that will enable FX service providers to offer new services, reduce fraud or further simplify the payment process?
2. How does a significant increase of deposits or withdrawals of funds impact FX trading provider’s operation?



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The majority of cryptocurrency investors are digital natives

3. What can FX service providers do when they see a high abandonment rate?

The arrival of cryptocurrencies is a good example of how FX is a constantly evolving marketplace. What role could Open Banking play in helping to make this new asset class more transparent, secure and accessible?

The majority of cryptocurrency investors are digital natives and the payment process using Open Banking is something they are very familiar with. Open Banking will make adoption much easier for anyone new to cryptocurrencies and it is a perfect opportunity for service providers introducing e-payment technologies to early adopters.

What factors might influence who FX market participants choose as their preferred Open Banking payment services providers?

The key differentiator boils down to UX, speed and security of the chosen platform. For example, how many clicks does it take to make a transfer

or how long does the transfer take? From the provider's perspective, how quickly will they receive the funds? Any potential fraud or chargeback risks? Does the solution lead to a higher sales conversion ratio and improved customer satisfaction?

In what ways do you think Open Banking will open up new opportunities in the future for FX providers to offer more innovative, value-added services that create more 'stickiness' with their clients?

87% of customers will abandon their transactions when they feel it is "complicated" or require too many steps. When there is a delay in deposits or withdrawals, more customers will complain, which results in poor customer reviews, brand erosion and additional burden for client support centres.

Payment Asia's Open Banking solution is designed with a mission to give users the best payments experience. We achieve that by setting an industry benchmark in reducing transaction time to within seconds, when others take minutes or hours. In our decades

of experience serving the FX market, we understand that a minute's delay will have a significant impact on the profitability of a trade due to market volatility. Once users have experienced payments within seconds, you will see a significant improvement in customer satisfaction and reduction in abandonment rate.

Ultimately how can Open Banking deliver competitive advantages to the FX market participants who fully embrace it?

With Open Banking, regulators open up the financial industry to more competition and makes it easier for customers to switch from one provider to another. A frictionless and instant payments experience goes a long way in winning and retaining customer loyalty. When the FX market is moving in milliseconds, FX providers need to keep pace with technology and expectations of their customers to remain relevant. Service providers that fail to embrace Open Banking within the next 2-3 years are not just going to miss out on opportunities but are also unlikely to survive in the digital world.

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