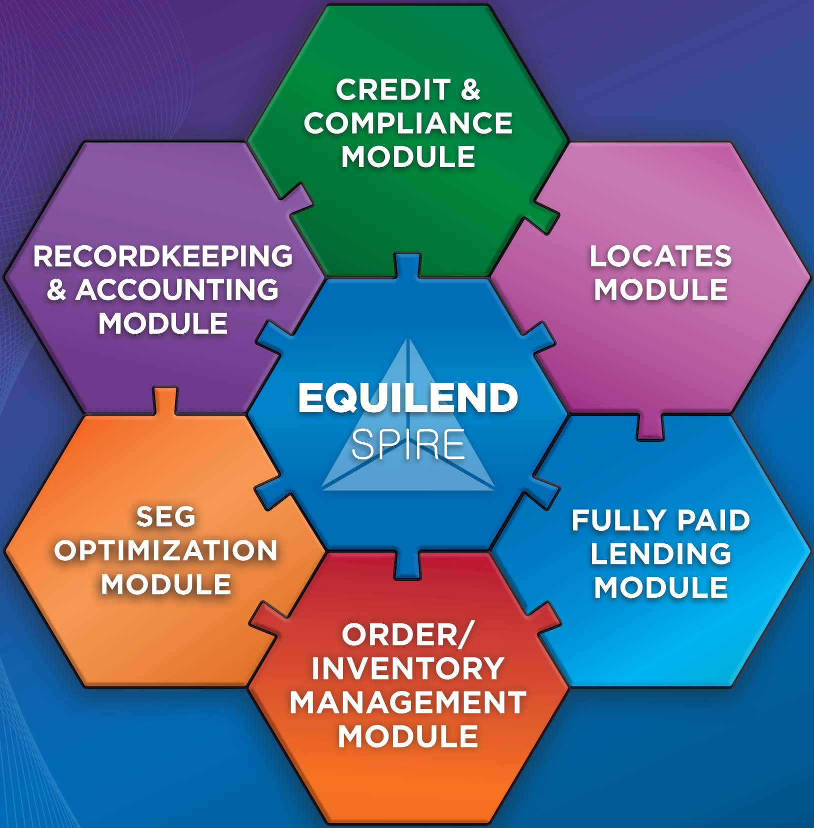
securities lending times

Technology Annual 2020



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Editor's letter

Much lip-service has been paid to the notion that technology is the main vessel with which the securities finance industry will carry itself to a better tomorrow, but never has that idea been more clearly shown than in the opening months of 2020.

The industry and its regulators spent over a decade reinforcing capital markets against a repeat of the economic blow struck in 2007/08, only to be blindsided by a global healthcare crisis the likes of which we have never seen before. Luckily, as these pages will show, this does not mean the industry was not able to weather the storm.

When the novel coronavirus and the COVID-19 disease first spread out of China at the turn of the year and a new decade, few predicted the devastating impact it would come to have on societies and economies around the world.

As the year progressed, for companies, the idea of 'business-as-usual' was turned on its head and only technology could help retain any semblance of normalcy.

As a result, the pages of this SLT Technology Annual are filled with discussions around innovations in areas that would not immediately have been top of mind in previous editions, such as video conferencing and virtual private network applications.

Global firms that watched their offices in Asia, then Europe and North America temporarily shutter their doors as the pandemic spread, were forced to dust off business continuity plans that may not have been seriously reviewed since 9/11 or the financial crisis.

Depending upon where you sit in the securities finance landscape, the ability to automate aspects of your trades, especially post trade, or handle huge spikes in volumes, while also adapting to remote working, was the divider between those that struggled and those that rode the wave of the disruption.

At the time of writing, the middle and long-term effects of this unprecedented time in our lives are still forming and are mostly fluid, but some things are already clear. The emphasis on applying technological solutions to fortify businesses against the next black swan event will undoubtedly be moved higher up the priority list and I hope this Technology Annual will help guide readers on that journey.

Drew Nicol, editor, Securities Lending Times

Publisher: Justin Lawson
Justinlawson@securitieslendingtimes.com
+44 (0) 208 075 0929

Editor: Drew Nicol
Drewnicol@securitieslendingtimes.com
+44 (0) 208 075 0928

Reporter: Natalie Turner
Natalieturner@securitieslendingtimes.com
+44 (0) 208 075 0926

Reporter: Maddie Saghir
Maddiesaghir@blackknightmedialtd.com
+44 (0) 208 075 0925

Office Manager: Chelsea Bowles
+44 (0) 208 075 0930

Marketing Director: Steven Lafferty
Stevenlafferty@securitieslendingtimes.com

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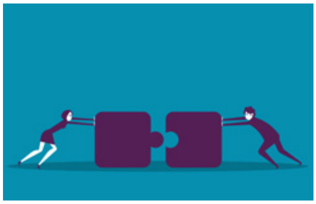

Modernising the securities lending infrastructure

Matt Wolfe
Vice president securities lending
OCC

OCC has set out a vision to establish a permissioned distributed ledger network for cleared securities lending transactions

The role of the Options Clearing Corporation (OCC), the world's largest equity derivatives clearing organisation, in the securities lending market is to serve as the central counterparty (CCP) for lenders and borrowers.

As a CCP, we provide a guarantee of performance and mitigate the risk of loss due to a failure by the original lender or borrower.

We identified some common industry challenges by listening to market participants and we are working on developing solutions and tools to help them lower their costs stemming from manual processes, lack of automation, and disparate systems. That is why we are working with Axoni, a technology firm that specialises in multi-party workflows and infrastructure, to develop and implement a distributed ledger technology (DLT) solution to replace our existing securities lending infrastructure. This new technology solution will benefit our clearing member firms and securities lending market participants by increasing efficiency and reducing reconciliation and associated costs. This new platform will also lay the foundation for a future fit CCP securities lending model.

Our vision of the initial roll-out is to establish a permissioned distributed ledger network for cleared stock loan transactions, governed by OCC. With the potential for peer nodes at clearing member firms that will enable participants to have a real time, accurate copy of contract and activity information, thereby reducing the need for manual reconciliation. The solution will be deployed using AxCore, Axoni's distributed ledger protocol, and is slated to be hosted in the cloud.

OCC, Axoni and our clearing member firms already have identified several opportunities to further streamline processing within the securities lending marketplace once the baseline platform has been established.

Our securities lending programme was created in 1993 to clear and guarantee transactions between our clearing member firms, with OCC serving as the CCP to lenders and borrowers. Since 2017, securities lending clearing volumes have increased by a compound annual growth rate of 16 percent, and open interest has grown by 22 percent. As of 30 April, OCC balances were approximately $72 billion, which is about 13 percent of the total equities on loan across the Americas.

The 2010 Dodd Frank Act and the establishment of minimum risk-based capital requirements have been key drivers of increased CCP usage. More recent regulatory changes may also generate additional interest in the CCP securities lending model. As the uncleared margin rules for non-cleared derivatives continue to be applied to more and more counterparties, it is possible more firms might look for alternative ways to achieve the same financial outcome of gaining exposure to a security or hedging the risk of financing. Securities lending through a CCP may provide opportunities to do that in an equivalent way on potentially a lower cost basis.

To help us get to this point, we have been executing a three-stage strategic plan that reinforces our foundation as a resilient CCP, allowing us to begin work on new products and enhanced services to help our clearing member firms gain capital savings, and innovate for the future.

For our securities lending programme, our new DLT platform will support an enhanced model that will more closely align with market practices and better reflect OCC's role as a CCP. Some of the programme enhancements that OCC is working on include a new trade interface to receive and confirm details of transactions prior to them settling and/or updating contracts.

By confirming counterparty agreement before the fact, we can help reduce the challenges associated with reconciliation and agreement after the fact. This new trade interface will also allow OCC to have more complete contract details to reduce residual counterparty credit risk on interest and cash distributions. Not only will this reduce risk, but the settlement of these cash flows will be far more efficient through single net payments to-and-from OCC as opposed to myriad counterparty-specific payments needed today.

Once this new platform and technology are in place, we will begin taking steps toward introducing services such as support for baskets of loans for term financing, as well as non-cash loans, as part of growing our base.

In terms of future opportunities, we are looking at how we can expand our membership eligibility to support entities that have not been able to self-clear in the past (e.g. banks, corporations, and others). We are also looking at buy-side specific solutions, where CCP securities lending creates potential for higher utilisation, lower costs, and improved pricing.

Most buy-side firms' securities lending activities are facilitated by agent lenders that are subject to capital requirements, as are most borrowers. Clearing transactions through a CCP like OCC means that the regulatory capital requirements are typically about 95 percent less than uncleared bilateral transaction. Not only could that reduce the costs of agent lenders, it also could create potential for borrowers to be able to borrow greater amounts of securities or offer better pricing for the securities they are already borrowing. All of these should boost the profitability of lending programmes.

At the core of this work is our Renaissance Initiative, a multi-year effort to modernise our risk management, clearing and data systems. The point of Renaissance is to make sure we are delivering on what the industry needs. We are working closely with our clearing member firms to understand what they need in the short term and also thinking about what we can do now to ensure we are addressing needs that may be unidentified, perhaps five to ten years down the road.

There are other ways that OCC is working with the industry on solutions that will benefit all of us. One example is our work with the FIX Trading Community on a set of enhancements to the FIX messaging standard for securities lending. Adoption of standards has helped improve other areas of the financial markets, (e.g. equities and derivatives), and we are working to bring those benefits to the securities lending market. This will enable more accurate communication, more rapid adoption of new trading platforms, and innovation from third-party service providers.

Once this new platform and technology are in place, we will begin taking steps toward introducing services such as support for baskets of loans for term financing, as well as non-cash loans

OCC believes that by collaborating with the industry on process changes, standards, and new technology that we can help the industry reduce their costs, improve efficiency, reduce risk, and support greater profitability.

We are very grateful for the feedback and guidance of the industry on these changes and we are looking forward to continuing this relationship and implementing changes to benefit us all.

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Maintaining velocity

Brian Lamb discusses how EquiLend has adjusted to remote working practices and explains that the firm’s development pipeline has never dried up, despite the disruption

Drew Nicol reports

The past couple of months have been dominated by COVID-19, can you tell us what it has been like leading a business through these challenging times?

Our management team huddles every morning to review not only team performance, but also check in on people more personally. Who is doing well, and who is struggling? Where can we offer support or resources? That morning session enables us to continue sharing information on our business, our people and our response to the pandemic. But it also provides welcome moments of connection, which has become a highly-prized commodity in this new environment.

I'll be honest. It has been a hard adjustment for me personally. As my EquiLend colleagues will attest, I am a very social person and enjoy being surrounded by others in the office. While I do have an office for one-on-one meetings, I spend most of my time sitting out on the floor with everyone. There is so much organic ideation and creativity that happens when you're surrounded by an excellent team. That collaboration is a huge part of the business, so it's very strange to now be working in a manner where there is a lot of isolation - that is something I never saw coming nor fully appreciated previously. That said, despite some of those challenges, we have worked quite well in a remote environment. As a global business, we have been using video for inter-office communication for more than six years. We were able to enact our business continuity plan and transition seamlessly to work-from-home because of the groundwork we have laid over the years for unpredictable situations such as these.

How is EquiLend preparing to return to office-based work? Have any of your offices already returned?

Our Hong Kong office is really going to be taking the lead here. They were naturally impacted earlier than our operations that cover the US and the EMEA (Europe, the Middle East and Africa) region, not only because of their proximity to the original epicentre of the virus, but also through the riots in the city. It has been really valuable to be able to learn from their experience and apply that knowledge elsewhere. The shift to opening offices up again is going to evolve in a very localised fashion that takes into account the relevant jurisdictions' regulations and the rules of the landlords on the ground, as well as the safety of our employees. Working remotely has functioned quite well for us, and we do not intend to be the first movers back to an office environment.

EquiLend has had a busy year bringing new products to market. Can you tell us more about these innovations and the motivations in launching them?

Our innovation whiteboard is always filled corner to corner. Our team is fixated on constant innovation. That company ethos pushes everyone within the business to not only respond to client needs but anticipate and get ahead of them. We've launched several new products in the past six months that illustrate our innovative approach: Swaptimization automates the total return swap trading workflow, and our Collateral Trading Service gives clients a centralised, efficient way to upgrade and trade collateral. We've also launched EquiLend Exposure, a centralised exposure management platform, and our solution for the Securities Financing Transactions Regulation (SFTR) is ready for reporting go-live in July. These recent product developments are the latest evolution in our 20-year journey of delivering innovative solutions that meet the shifting needs of the securities finance—and now collateral and swaps—marketplaces.

How has the product expansion impacted the business? Has it required additional resources across employees and offices?

It's an understatement to say that EquiLend is growing across every facet of the organisation. This has been driven largely by two factors: first, we continue to anticipate and respond to industry needs and launch new products that the industry wants; and, second, we see an increased need for our established product set. We are the biggest, broadest virtual exchange in securities finance - no one is doing what we are doing at this scale. We have increased our headcount and global operations to keep pace with the market demand and in anticipation future expansion. In what is really a key barometer of success for me, that growth has not just been confined to our US headquarters. We have experienced phenomenal growth in Europe, led out of our London and Dublin offices, but also across Asia in Tokyo, Hong Kong and beyond.

What is your outlook for EquiLend in the next 12 months? Do you foresee continued growth?

We expect take-up for the products we've launched in 2020 to be considerable, but we won't be resting on our laurels. Our development pipeline is strong, and we will continue to innovate in post trade, as this is a major area of inefficiency in this market.

We are also focused on delivering the best and cleanest market data to clients, which is increasingly a crucial tool for market players. What I constantly find remarkable is that many of the tools available to the industry to manage middle- and back-office flow are archaic, unmanageable and come with huge price tags attached to them. A key focus for us in the next 12-24 months will be closing the gap on the existing products to bring efficiency and cost-effectiveness to the market at scale.

Beyond COVID-19, what other headwinds, or tailwinds, do you expect the securities lending industry to face this year and into 2021?

It won't come as a surprise that technology is top of my mind here. We have seen the market evolve and advance considerably over the past five to 10 years, particularly with regard to technology. The extraordinary volume of transactions over the past few months has required market participants to rely more than ever on technology, in particular automation. In February this year, the trade count on NGT hit over 140,000 in a single day, a historical record. Clients were transacting in record numbers on our NGT platform and record post-trade processes in our Post-Trade Suite while transitioning to a work from home environment. They wouldn't have been able to do that without having automated those processes on our platform. After COVID-19, I expect to see those increases continue and adoption of technology and automation to accelerate. I really hope to see a similar take-up of enhanced technology in the post trade space and in other corners of the market, such as collateral and swaps. Pandemics and other crises are going to necessitate that middle- and back-office solutions become more fully automated to allow the rest of the business to flourish. Innovation in these areas will 'future-proof' businesses and introduce efficiencies that will enable them to scale and thrive going forward, whatever challenges may be yet to come.

> *What I constantly find remarkable is that many of the tools available to the industry to manage middle- and back-office flow are archaic, unmanageable and come with huge price tags attached to them. A key focus for us in the next 12-24 months will be closing the gap on the existing products to bring efficiency and cost-effectiveness to the market at scale.*

The changing world of cloud solutions

Martin Foster
Head of cloud deployment
FIS

In a rapidly changing marketplace, FIS' Martin Foster, head of cloud deployment, takes a look at how cloud solution providers help organisations become more business-focused while still maintaining a technological innovation lead

Taking a step back in time, the collateral and securities finance marketplace was very different three years ago with respect to the adoption of cloud solutions. The key drivers to move the business to a cloud-based model mainly resided with smaller organisations, typically grounded on cost, resource limitations, internal blockers, and demand for quicker time to market. Today, the marketplace could not be more different as the pandemic has highlighted specific challenges on internal infrastructure. Trading volume and margin call spikes, thinner margins, cyber-risks and infrastructure demands of working from home and the constraints of legacy technology are driving organisations large and small to move more and more to the cloud.

To illustrate the scale of the challenge, in March 2020, FIS' clients experienced a three-fold increase in trading volumes on our systems and a 2.5-times spike in post-trade processing. In speaking with our clients during this time, we heard consistently that budgets and discretionary spending were constrained, and they expressed an accelerated need for managed services and cloud offerings. Their focus is on cost and resilience and less on the tools of IT and infrastructure delivery.

While many are just beginning to see the seeds of change, the pace of cloud adoption is increasing and will continue to do so at an accelerating rate for the foreseeable future. The financial industry has become too reliant on complex technologies and bespoke processes to meet current demands, so the future policy is not just for new solutions and opportunities, it's the migration of legacy solutions and a new way of thinking across the board. Now is the time to start embracing these changes, stepping forward into the future, and reaping the benefits.

In the past, interest was low and for those where an engagement was established, often significant roadblocks were faced, some insurmountable. Over the past months, the direction has completely changed with the majority of engagements being wholly directed towards the adoption of cloud solutions or forming a solid option for discussion. Today, most new engagements demand the option for cloud deployment, demonstrating clearly that the market's mindset has changed. At FIS, we have seen a considerable uptick for our Apex Collateral Cloud deployment requests over the last few quarters not only from new prospects evaluating solutions but also from existing clients looking to migrate from an on-site installation as the benefits become more compelling.

Historically, some of the biggest challenges to senior management lay with security and today's unpredictable economic and regulatory landscape. It is often seen as easier to keep the status quo with on-premises solutions where in-house teams could provide the necessary IT infrastructure and support. However, the growing quantity of bespoke solutions and the pace of technological change means that capacity and costs are increasingly out of balance with business benefits. It's time to ask yourself if these limits have been reached.

What's changed with cloud solution providers

It is clear that the cloud solution provider (CSP) has a key focus on the security of customer information and data, from guarding them against cyberattacks to maintaining data isolation and stringent access controls. Organisations are adopting a more 'security-first' thinking, which is highlighted by the FIS slogan of 'defence in depth' when referring to cloud solutions. It takes a certain focus from the CSP to innovate, foresee risks and trends, and react to the changing global demands. Customers need to feel confident in the supply of secure services, have trust in the CSP's ability to be a market leader and cope with unforeseen events such as the financial crisis and COVID-19. Often, this can be found with larger CSPs that utilise a large pool of experience from many customers and have resources to invest in technology.

The cloud has seen considerable growth in many sectors, increasingly being used to outsource platforms and build new solutions. This in itself is not a means to an end; it is just one part of the overall picture. The primary focus should remain on security alongside the ability to reduce financial, time, and human costs. CSP should view the cloud as a tool, but the key to their success is the ability to provide security and effective governance on top of the base services.

As a CSP in the financial space, FIS has security at the core of its organisation, allowing it to not only provide its own cloud offering, the FIS Cloud, but to be agnostic to other providers, taking their offerings and wrapping security, governance, regulatory compliance, and rigorous auditing together to form a market-leading solution.

Trending technology

The world is witnessing a paradigm shift in technological trends and it’s redefining the way business is done. Business models are facing extreme pressures from regulatory, security, and other market forces, necessitating an increased focus on operational efficiency and effectiveness. Transitioning to a CSP removes the burden of an organisation’s IT infrastructure and human resources – allowing the business to focus on its core competencies.

There is also increased pressure to innovate while keeping pace with technological advancements. The CSP needs to embrace technology to solve current problems, but it also should look to providing enhanced solutions for the future to save costs, speed up delivery, and provide additional business services.

Emphasising the focus on data isolation where a single-tenanted solution is preferred by the customer, the use of containerisation application platforms such as OpenShift can unite multiple customer operations onto a common platform to build, deploy and manage applications consistently. Commonality is a key factor to a lower-cost solution and the path to a more stable, supportable solution providing obvious customer benefits as well.

Innovations in continuous integration (CI) and continuous delivery (CD) allow for quicker deployments where changes and new application features follow a fully automated path, essentially putting updates into production on demand. CI/CD allows the application developer to become more productive, ensuring a focus on code quality and security. Technological advances and regulatory compliance changes can be quickly integrated into a common platform – saying good-bye to long waits for new versions and upgrades.

The future

Financial customers will continue to demand more of their CSPs. The best providers will be rewarded for infusing their offerings with high-value services that cover more than IT and basic support. Long-term strategy for success must include a focus on purpose-built offerings that help grow client business, solve strategic business problems and provide a future direction in areas such as cloud, big data analytics, blockchain, and artificial intelligence.

FIS is well placed to drive this change not only with its cloud computing capabilities but also as an application services provider that couples secure hosting services with the development of specialised applications and services. This approach can leverage the advances of containerisation and CI/CD along with tightly coupling services to third-party solutions, such as direct links to clearing houses or brokers where connectivity components can be mutualised, reducing start-up costs and ongoing maintenance.

Key takeaway

Not all providers are created equal or can help you address the changing marketplace. Some simply don’t understand the technological obstacles being faced, others do not have the needed resources. Reputation counts for a lot in today’s world, it is built up over many years of proven results and with confidence to maintain a lead against an uncertain future. Think about your organisation’s key strengths and business focus when you are ready to embrace the future and find a CSP that is a partner for tomorrow.


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Integrating HQLA^X into the financial market infrastructure

Raoul Bhoedjang and Mario Schlipf explain how the HQLA^X platform uses DLT and discuss what is needed for frictionless integration into existing financial market infrastructure

HQLA^{X} is one of the first securities lending platforms to use a distributed ledger technology (DLT). Connected to major industry partners, the platform enables participants to seamlessly execute capital-efficient securities lending transactions for enhanced balance sheet optimisation.

HQLA^{X} is an innovative financial technology firm founded by financial market practitioners. Our core clients are financial institutions active in securities lending and collateral management. Our shareholders include market-leading service providers in the global financial ecosystem.

The firm formed a strategic partnership with Deutsche Boerse Group for the creation of a joint operating model. The key value proposition of this model is to mobilise collateral across a fragmented custody ecosystem; this is done without moving the collateral from one location to another.

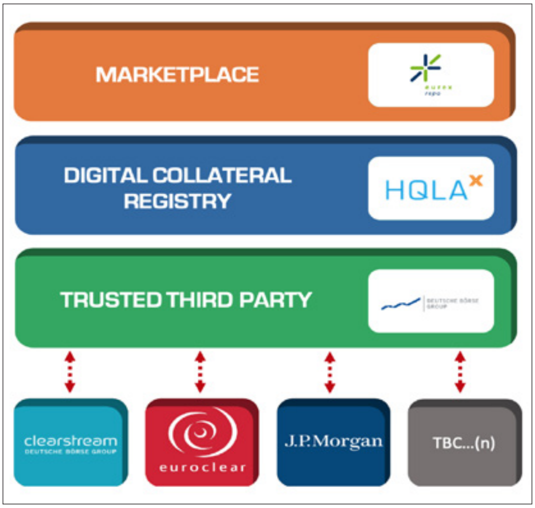
Operating model

The HQLA^{X} operating model consists of four layers and aims to facilitate more efficient collateral management of high-quality liquid assets (HQLAs).

- Trades are executed in the marketplace layer, which is the leading Eurex Repo F7 trading system.
- The digital collateral registry is a distributed ledger that records post-trade events, including all ownership changes. This registry was built on Corda, R3's distributed ledger technology.
- The trusted third party (TTP) manages segregated collateral accounts at the connected custodians on behalf of platform participants. In particular, it informs the custody entities (triparty agents or custodians) about their obligations to supply collateral for these accounts.
- The custody entities (custodians or triparty agents) are responsible for safe-keeping securities and moving into and out of the segregated collateral accounts. Today, the platform is connected or connecting to leading triparty agents: Clearstream International, Euroclear and J.P. Morgan.

The HQLA^{X} operating model allows market participants to connect to the platform via existing well-established interfaces.

In this model, securities do not move between custodians. Instead, a digital collateral registry is used to record ownership of baskets of securities, while the underlying securities remain static in the custody location of the collateral giver.



The advantages of distributed ledger technology

In today's world, clearinghouses and other financial institutions usually use centralised ledgers as their central repository of transactions. A ledger contains the history of all past transactions and the balances per account. The provider of a centralised ledger maintains total control of this data, effectively creating a single source of truth. Verifying the integrity and correctness of such ledgers relies on reconciliation processes. Such processes involve multiple administrations and are frequently costly and time-consuming.

DLT allows multiple parties to securely create and share ledgers between them. No single party has full control over what is written to the ledger. Instead, participants of a distributed ledger are assigned roles and permissions that define their rights to append information. Each participant can cryptographically verify the information written to the ledger by other parties. Moreover, the technology allows the modelling of complex business logic and facilitates transparency and automation in existing clearing and settlement processes.

How HQLA^X uses DLT

HQLA^X uses Corda as the underlying DLT to build the digital collateral registry. The HQLA^X platform is a Corda business network where trading financial institutions, Eurex and the TTP are represented by Corda network nodes.

To facilitate integration with existing market infrastructure, HQLA^X works with existing securities that are not issued on the ledger. The distributed ledger that is maintained by the HQLA^X participants' nodes tracks ownership of those assets, but the on-ledger records are not, themselves, assets. Critically, each platform participant accepts the HQLA^X digital collateral registry as the source of truth for ownership backed by a legal model that allows ownership changes while the securities remain in an account opened by the TTP.

A typical business transaction is a collateral upgrade transaction where one party lends HQLA to a party that offers lower-quality collateral in return. The digital collateral registry enables the atomic change of ownership of baskets of securities between the institutions, at a specific date and time. Corda allows businesses to manage their transactions directly while keeping strict privacy. That is to say, data is shared on a need-to-know basis with institutions having full transparency of only the data that is relevant for their business.

In a nutshell, DLT in the HQLA^x model enables frictionless ownership exchange of baskets of securities at precise moments in time during the day.

The need for an evolutionary transition

With the idea of a decentralised world of market participants in mind, our goal is to make integration and onboarding to the HQLA^X platform as easy as possible. To this end, HQLA^X works with a widely used trading platform, Eurex Repo, and builds on existing legal constructs (the Global Master Securities Lending Agreement). Similarly, at the custody side, the platform connects to major custodians (currently Clearstream, Euroclear, and J.P. Morgan) through the TTP, using existing SWIFT messaging.

In addition, we need to consider that DLT is an emerging technology and that financial institutions and service providers are operating in a highly-regulated field. Our clients and partners are at different stages of assessing DLT and not all are ready to integrate a DLT-based system into their enterprise architecture today. To facilitate frictionless adoption, HQLA^X, therefore, offers an evolutionary transition, where participants can start out with their node hosted in a secure data centre from an HQLA^X partner. This allows a fast onboarding process onto the HQLA^X platform to already use the benefits of the platform today. In parallel, the participant can transition into a scenario where the node is hosted in its own data-center or cloud provider. ING Bank N.V., a thought leader in DLT research and applications, is among the first to actively pursue this option and we expect more clients to join them.

Where we are going

The HQLA^X platform mobilises collateral using a single well-known transaction type: a collateral (upgrade/downgrade) swap. HQLA^X is a client-focused and client-driven company. We highly value our interaction with clients on additional use cases. Such potential use cases include working with other hard-to-move assets (such as gold), other transaction types (e.g., pledges), and richer information on the ledger (e.g., asset inventory). We also expect that clients, custodian and regulators will increasingly want to reap the advantages of a shared and verifiable ledger, which will in turn lead to reduced risk and cost.

The forefront of securities finance innovation

Comyno unpacks its expertise in the areas of distributed ledger technology and highlights pragmatic and cost-efficient solutions for SFTR compliance

Comyno is a specialised fintech company with more than 15 years of experience in securities finance focusing on software and consulting. We work with leading private and public financial institutions, clearing houses and triparty agents, combining our expertise in strategy, processes and technology.

We have extensive experience in the provision of standardised and tailor-made solutions, increasing functionality and efficiency across the entire value chain. Our innovative strength is demonstrated by our expertise in the area of blockchain and distributed ledger technology (DLT) and its practical application.

What do we offer?

We offer a range of consulting services including, strategic, business analysis, technical and infrastructure as well as project and program management, and product architecture and design.

We have a variety of software solutions including a C-ONE securities finance platform: a suite built to deliver straight-through-processing for all securities finance business activities.

C-ONE connectivity, a standard connectivity to systems and providers in securities finance.

C-ONE SFTR regulatory reporting solutions customised software development and DLT/ blockchain development.

Rich front-to-back, state-of-the-art suite of software modules

Increasing efficiency across the entire securities finance process and value chain has always been one of the industry's main challenges, even more so within the fragmented and complex framework of most market participants. This has also been highlighted again in the recent period of increased market volatility.

Our C-ONE platform addresses many of these challenges. Essentially, it is a highly flexible set of modules that can seamlessly be integrated into existing legacy infrastructure. Its front end can, yet does not have to be used. This is a vital advantage for any market participant successfully operating with a legacy front office system.

Comyno provides various tools, such as C-ONE collateral, C-ONE trading, C-ONE risk management and C-ONE reporting, which can be easily expanded in a quasi plug-in-and-play manner, once the first component is established (see Figure 1, overleaf).

C-ONE combines management technologies and data analytics tools into a single software suite with an intuitive and easy-to-navigate customised dashboard/ cockpit. A dedicated data management platform, C-ONE connectivity, imports data from various systems and enables customers to view the data in a clear and concise manner. It effectively serves as a data warehouse hub with the ability to receive and send data.

This range of tools give our clients the ability to cover all securities finance related topics as efficiently as possible. They will be designed solely based on our clients' respective requirements. A key role of the C-ONE platform is the collection of both structured and unstructured data from a range of internal and external sources and its subsequent integration and storage (see Figure 2, overleaf).

Furthermore, it provides a tailor-made hosted solution with front end, middle and back office functionality at a reasonable cost for our clients. With the adaptor based new platform technology, C-ONE does not need the programming and maintenance that is necessary for the broad range of other interfaces and existing in-house systems.

Pragmatic and cost-efficient solution for SFTR compliance

In addition to the recently added SFTR module, which is fully integrated into the C-ONE suite of systems, we developed C-ONE SFTRLite. The idea was to facilitate the requirements for companies which already have a strong database for its securities finance business and prefer a light technological footprint to meet the regulatory requirements or have the data spread across multiple systems.

SFTRLite was created to support customised data imports, validation and adjustment of the provided data and converting it into the required xml schema, so it is ready to be reported to a trade repository (see Figure 3).

A new dimension custody network using blockchain technology

Both parts of traditional securities finance transactions, principal and collateral, continue to be scattered across custodians and (I)CSDs, with significant issues arising from moving them quickly and efficiently from where they are to where they are needed. The current crisis reinforces the need for revolutionary technology.

Figure 1

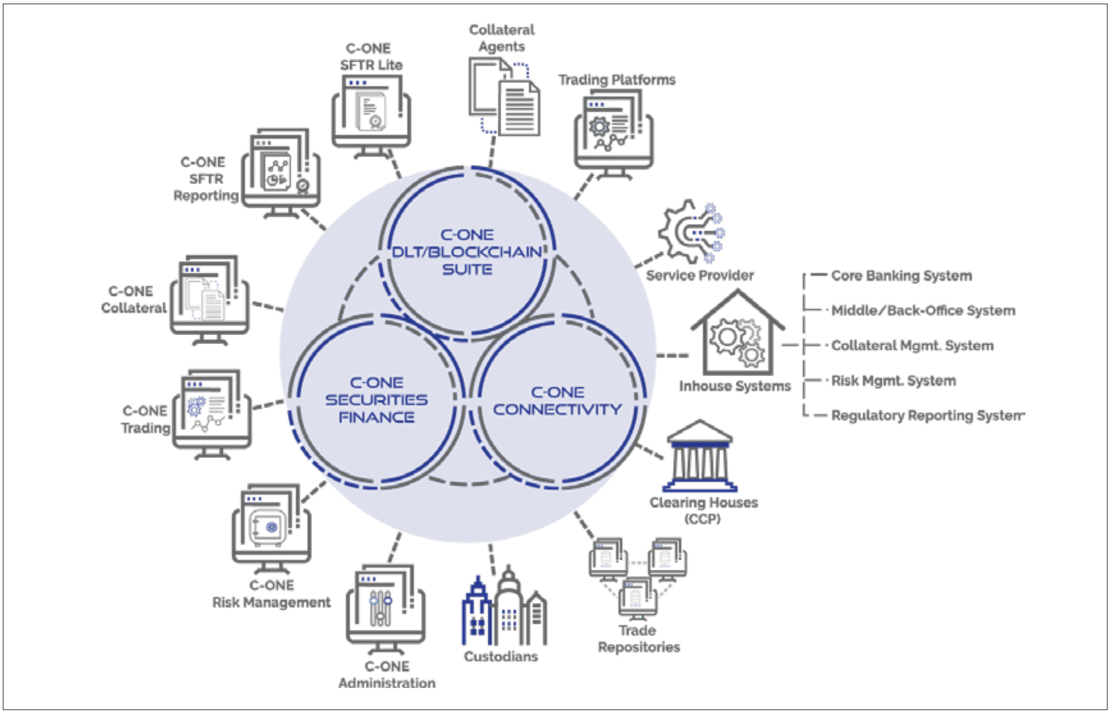
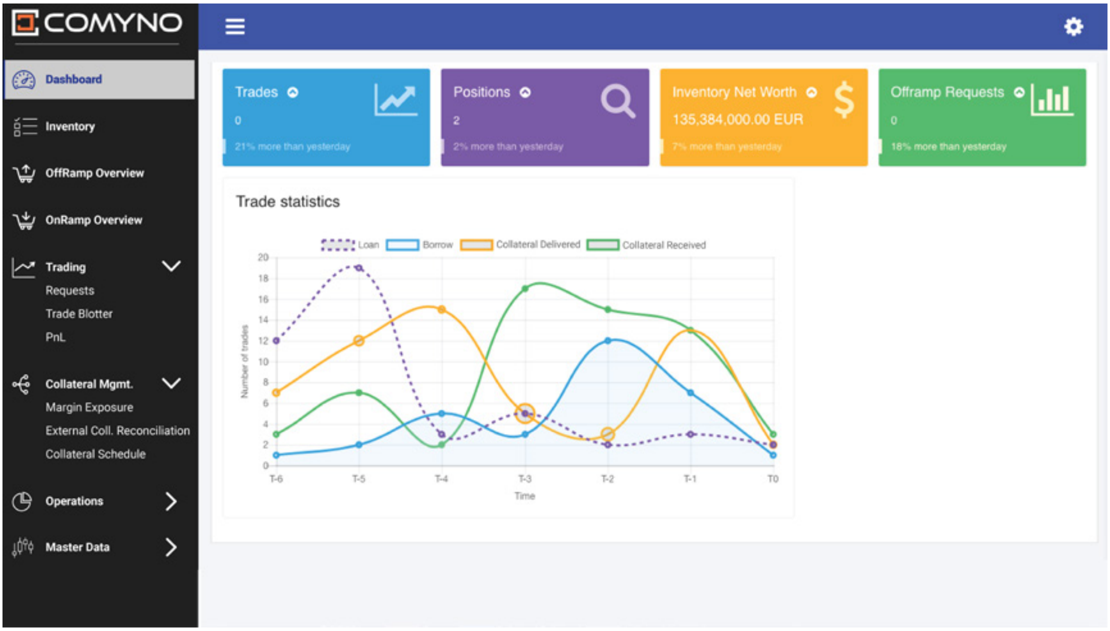


Figure 2



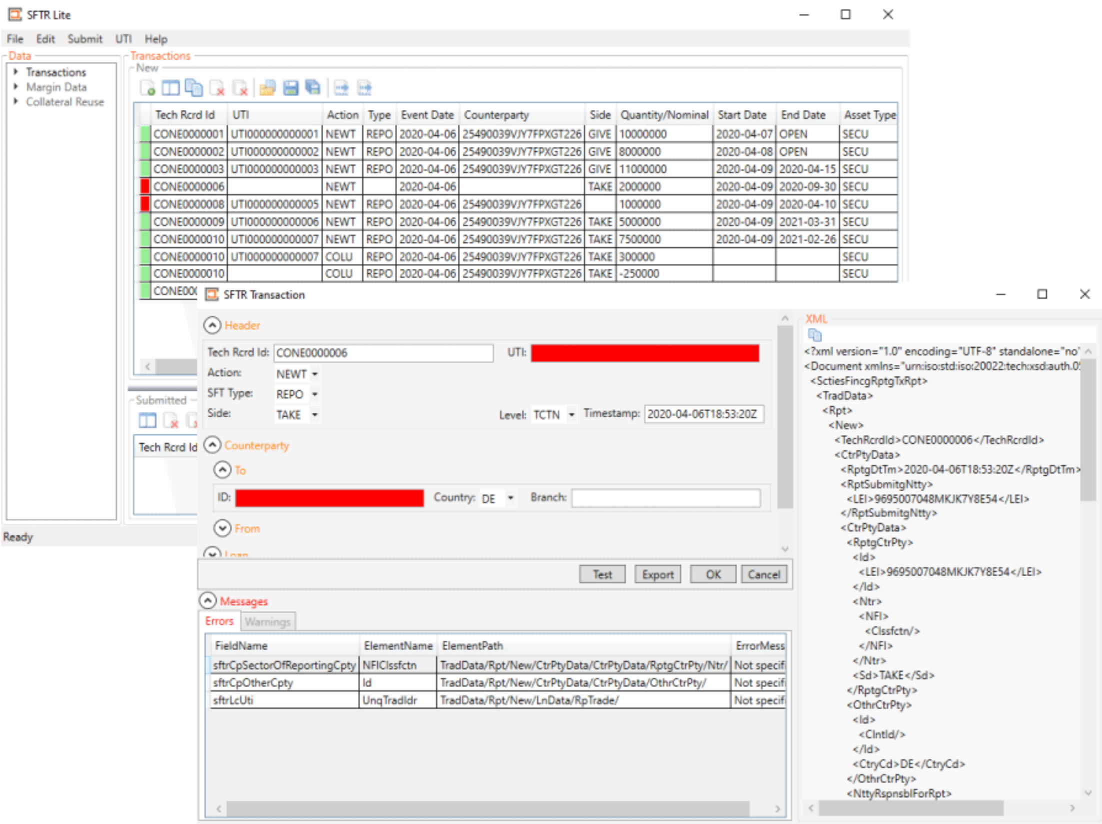
Blockchains as one form of DLT have been seen as a potential solution. More specifically, the concept of blockchain based securities settlement has been floating around ever since blockchain, respectively DLT, has been around. That said, the reluctance by many market participants to challenge the established custody model has been underestimated. This explains to an extent why tokenisation using a blockchain based custodian has not gained any traction yet. We share the belief that the real viable solution is not tokenisation, but on-chain transfers and position keeping.

As Comyno was expanding its technological capabilities on blockchain and DLT over the past few years, we were well placed to get deeply involved in an initiative led by DekaBank, aptly named the Digital Collateral Protocol (DCP).

As indicated above, its key element is not tokenisation, but the creation of a common and joined settlement and custody protocol for the transfer of traditional securities. Crucially, it allows securities to be kept at their original custodian and CSD. This is achieved through the transfer of the settlement chain onto the DCP.

The settlement itself occurs within seconds directly between the participating custodians in a digital representation, exactly as they are today but without the physical settlement. We are convinced that this will be a breakthrough in terms of combining legacy settlement infrastructure and modern technology.

Figure 3



This in turn should lead to tangible operational and technological improvements and will hence free up resources for all involved stakeholders. The efficiencies lay in a multitude of areas bringing benefits from several aspects due to the fast and certain settlement:

- Easy expansion of trading relationships through a scalable, transparent and unified settlement network.
- Improved balance sheet efficiency due to reduced counterparty risk.
- Reduced business risk due to increased settlement efficiency leading to reduced buy in risks and fines.
- Increased operational efficiency by simple, instantaneous and straightforward settlement, hence decreased knock on effects across the process chain.
- Reduced settlement costs due to a smaller number of intermediaries for international activities

The project is at an advanced stage, having successfully completed all stages through to an alpha version. The initial use case is position keeping and securities settlement, initiated by the securities loan and non-cash collateral transfer. In other words, the DCP is now close to being in a position to book a collateralised securities lending transaction. The first legally binding trade on the DCP is expected in the near future.

Discussions are held with a large number of leading international and European custodians on the operating model for the DCP, discussing potential legal issues and their solutions, as well as the feasibility to implement this on an international scale.

With all this already achieved and close to production, we've gone even one step further and already enabled C-ONE connectivity to integrate the DCP into the existing C-ONE technology suite and act as the interface into the DCP.

C-ONE incorporates total connectivity via a message bus facility to every internal and external system or third-party entity. It can be used to link the existing internal technology landscape to the new technology without building own interfaces into the DLT.

It needs to be emphasized that the DCP is an initiative with a shared goal for all securities finance stakeholders, and a win-win constellation for the most part. There has been widespread interest across the securities finance industry with the aim to get the DCP fully operational as soon as possible.

We couldn't be more excited by the combination of forces and would be happy to engage in any form of dialogue to strengthen and extend the DCP network on a global basis.

Markus Büttner
Founder & CEO
Comyno

Frank Becker
COO & head of sales
Comyno

Delta One talks Revcon trades

Investors want nothing more than to enhance securities lending liquidity and revenue with a transparent peer-to-peer marketplace, Delta One explain how they have developed the technology to make this possible

The Chicago Board Options Exchange opened its doors to stock options trading in 1973, establishing the world's first marketplace for standardised, exchange traded stock options. Like everything in the global economy, US options markets have evolved significantly over the past 47 years, as has their role in equity finance.

Before the advent of multiple exchange listing and electronic trading, all options trades were manually priced and executed in a centralised physical location. To get a quote for an options structure, a broker had to physically walk out to a crowd and get a price from the market makers assigned to that stock. Each stock's options traded at a single location. Investors who wanted to exchange synthetic securities lending could meet in only one place for liquidity. The advent of multiple exchange listing and electronic trading decentralised liquidity across 16 exchanges, most of which do not have physical floors with dedicated market makers. The exchanges that have maintained physical locations generally don't have dedicated market makers standing ready to make prices.

Options are used to increase profits, hedge market risk, manage counterparty risk, and leverage views, but the use case that has exploded over the last ten years is their ability to create synthetic securities lending. Investors have dreamed of enhancing securities lending liquidity and revenue with a transparent peer-to-peer marketplace for a long time, and the options market can serve that need. Delta One has developed the technology that makes this possible.

Referring to Figure 1 and 2, overleaf synthetic loans and borrows can be created using options structures called reversals and conversions, or 'Revcons' for short. An investor that wishes to lend shares enters into a reversal transaction. The shares are sold alongside a put, and a call is purchased with the same strike and expiration. An investor wishing to borrow shares executes a conversion. The shares are purchased alongside a put and call is sold. Regardless of where the stock is trading at the expiration, the shares will return to their original owner. The economics and mechanics of this trade look almost identical to a term stock loan. A fixed fee is paid or received, borrow is secured for the entire life of the trade and a 'synthetic loan' has been created. There are some subtle differences that we will address later, but Revcon trades are an established method of creating a term synthetic loan in a transparent marketplace. Listed options have many characteristics that are attractive to securities lending managers and the securities lending marketplace: liquidity, transparency and a counterparty that effectively eliminates counterparty risk, the Options Clearing Corporation (OCC).

Strike and expiration selection

There are two major types of option exercise types: American and European. An American option can be exercised by the long holder at any time during its life, while a European option can be exercised only at its expiration. Most single name listed options in the US are American, which brings us to the major difference between trading a Revcon and a direct lending term borrow: early exercise risk.

To synthetically lend or borrow stock through the options market a securities lending professional would need to choose a strike and expiration. It's imperative to select the correct strike to minimise an adverse early exercise. An early exercise would not only end the synthetic loan earlier

Figure 1

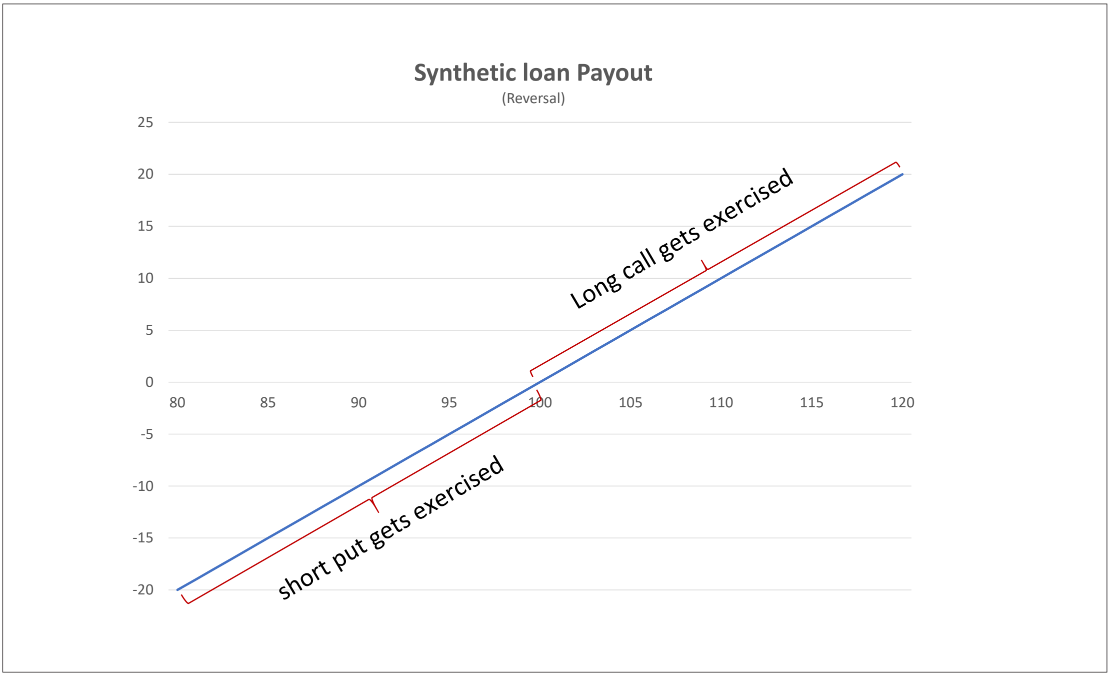
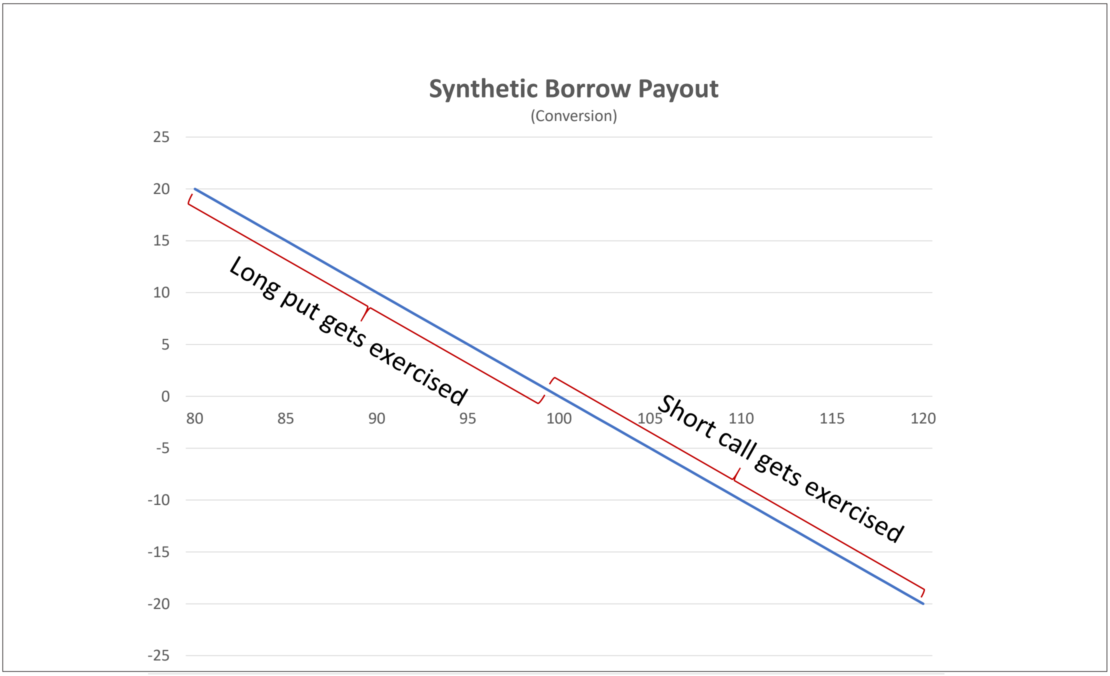


Figure 2



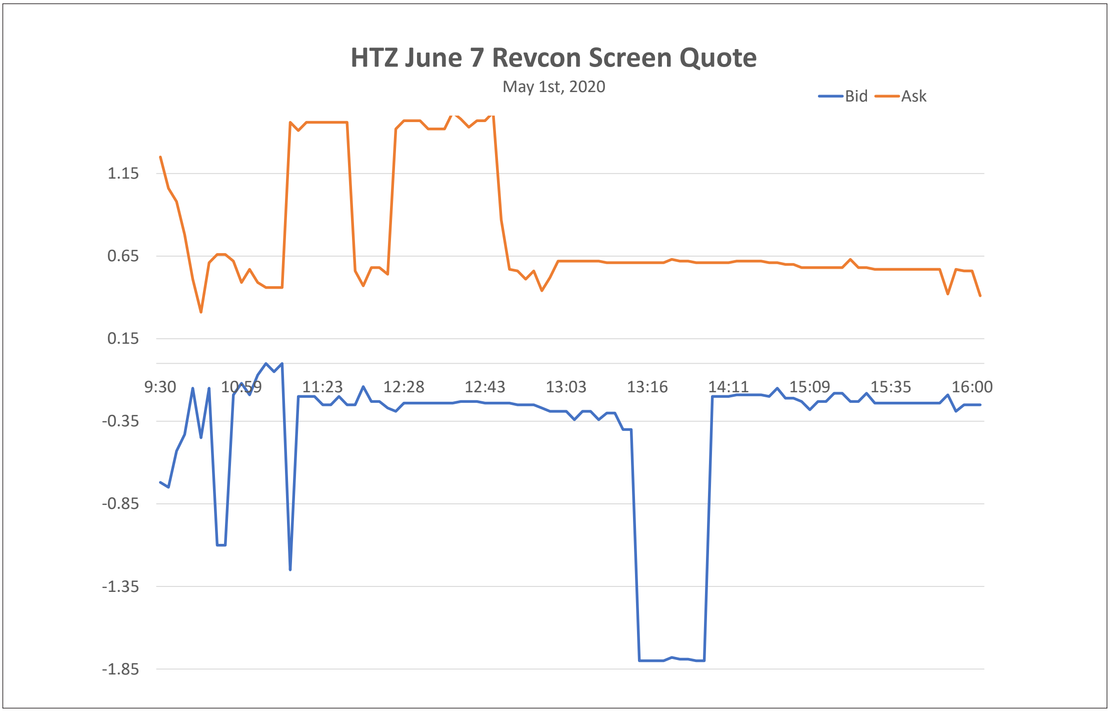
than expected, but it would leave the investor with a residual unpaired option position that would need to be unwound, which is an undesired outcome. Individual stocks have many strike and expiration combinations. Tesla for example has over 6,000. One of the many technical challenges we had to overcome was building an algorithm that processes market data in real time, uses machine learning and AI to dynamically pick strike and expiration combinations that minimise early exercise risk while seeking optimal liquidity. We had to start from scratch to optimise the needs of our customers. Our Goal was to build a system that does this, while being intuitive and user friendly.

Price discovery

A lender or borrower of securities looking to trade a synthetic loan in the options market would first need to understand its market microstructure. A very high level of precision is required to achieve the desired result. The difference between a good trade and a bad trade is usually measured in pennies, often fractions of pennies. Existing options quotation and pricing infrastructure in the US is wholly inadequate for this purpose. Minimum quotation increments for individual options legs are never less than one cent, and in many cases, are five or 10 cents. The synthetic loan package is isolating the economics of a term stock loan, while the individual options by themselves will have a very different risk profile. Their screen quotation will reflect this. We always consider the compiled screen quote before executing an option trade but looking at the compiled quote itself will not give us much insight into synthetic borrow pricing.

Hertz is a name that has became a hard-to-borrow due to the COVID-19 pandemic. Short interest skyrocketed from 15 million shares in mid-February to more than 58 million shares as of 30 April. Demand for borrow was up almost 400 percent which is reflected in overnight rates, term rates, and option pricing. Figure 3 is an intraday screen quote of the HTZ 7 June Revcon over the course of 1 May. On this particular day, synthetic borrows traded twice at 12:55 and then again at 15:48 for a total of 350,000 shares. The borrow fee paid to term the borrow until that June expiration was 30 cents a share in both

Figure 3



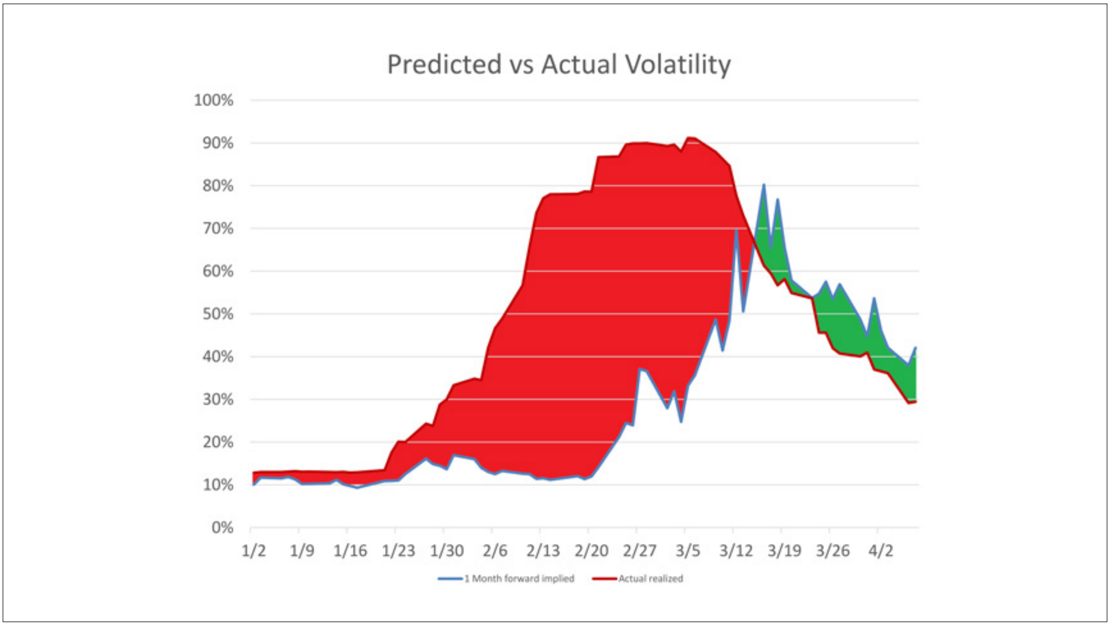
transactions. The market for the common stock was US$3.60 at US$3.61, a one cent spread. An investor pricing a common stock trade would have had very little uncertainty about its value. However, somebody looking to trade a 7 June Revcon would have had no such luxury. The screen quote at this particular moment in time was down 21 cents to 55 cents, meaning the quote was 76 cents wide! Comparing this quote to the 30 cents trade price will not give us much information about the fairness of the transaction for either side. Clearly another price discovery mechanism is required.

American vs European pricing

Calculating implied borrow rates on Revcons that are constructed with American options is a somewhat controversial topic. Closed-form solutions, meaning solutions that can be expressed with a mathematical equation and give an unambiguous answer, simply do not exist. European pricing models do have closed form solution and give a very high degree of precision with respect to predicted profit and loss (P&L) vs actual P&L, but don't model early exercise risk. The predicted P&L and actual P&L can diverge significantly for a synthetic stock borrow trade with meaningful early exercise risk.

Modelling is fragile. American pricing models that are able to model early exercise risk rely on a couple assumptions that are sometimes fatal. They assume that we know the volatility of the stock in the future, and also that we know returns will be normally distributed. If the first quarter of 2020 has taught us anything, it's that both of these assumptions can be wildly wrong. Figure 4 compares one-month interpolated implied volatility to the actual realised volatility that corresponded to the predicted period. The red regions correspond to times that the implied volatility market under predicted actual volatility, and the green regions are times the market over predicted volatility. The fragility of these assumptions was never more apparent than on 12 February, when one-month forward looking implied volatility was 14 percent, a measure of what market was expecting in terms of volatility for the following 30-day period. However, volatility for the 30-day period that actually followed was quite different. The market ended up realising more than 86 percent volatility for those 30 days. When you are expecting 14 percent volatility, and you get 86 percent, it shows that assumptions can be wildly wrong, and any model that relied on them would have been useless.

Figure 4



We have worked with many bankers that put far too much weight in their models. Over reliance on models creates bad outcomes. One can look to recent headlines to find evidence of this fact. Our strike selection AI and our pricing models are constantly evolving but they will never be better than their underlying assumptions. Early exercises are far better to be avoided than modeled for our use case. There is no simple answer to the modelling problem. There is however, a path forward.

FLEX European options

We believe we have developed the combination of technologies that can avoid early exercises in 99.97 percent of all synthetic borrow trades using American options. What about that last 0.03 percent? We think eliminating that last bit of risk is the key to bringing the larger stock loan universe into the synthetic market. FLEX contracts have been around for a very long time. They trade, clear, and face the OCC like regular listed contracts, yet can be created with European style exercises to avoid 100 percent of early exercise risk. Users could trade Revcons without having to create the risk infrastructure to deal with the 0.03 percent tail risk that a stock loan position turns into an outright options trade because of an early exercise. Our long term goal is to start quoting a standard strike and expiration FLEX European contract every month. When we are confident we can maintain a continuous two-way market in the system all month long in a big enough list of names, we will roll out FLEX European pricing to all system users.

Michael Pascutti, head of Quantitative analytics, professor – Yale University Delta One

The goal for many fintech startups is unfortunately to remove humans from the process entirely. That was never our goal. Delta One was designed to augment humans, not replace them. There is estimated to be $1.7 trillion worth of US equities on loan at any given time, and the US options market has over $3.3 trillion worth of notional open interest, yet the Revcon market rarely exceeds $35 billion worth of trades per month. From where we sit, it seems clear that the surface has just been scratched on this market and growing it will not happen without getting more humans involved, not fewer.

We often get asked what we think our total addressable market is. It would be easy to look at existing volume and say that it's not bigger than $35 billion per month, but we think that would be a very narrow-minded way to look at it.

Brandon Neer
Founder - Delta One
CTO Dynamex Trading

Harris Bock
Co-founder
Delta One , CEO - Dynamex Trading

Evolving regulations and the technology impact

Troy Peterson
CTO and co-founder
Hudson FinTech

Enhance, don't replace. This is the message from Hudson FinTech as it identifies innovative technology to help securities finance firms address the changing regulatory landscape

To support repo and securities finance trade capture and position management, regulations, analytics or reporting, the industry needs a common, flexible and robust technology platform that allows users from across an organisation to view and analyse the data needed to perform their job functions, and it needs to be future-proof. But that doesn't exist, right? Wrong.

Over the past few years there has been a great deal of talk about 'disruptive technology' and as a result, the trading landscape changing at a rapid pace. New markets are being created and e-trading is proceeding unabated.

But, the core technology of a trader's desktop seems to have been overlooked. Many of the trading applications being used by large trading firms use technology which dates back to the 1980s – why is that? More importantly, why does it cost so much and take so long to make changes to these trading applications?

Trading data workflows

In any trading business, the trader has data to view and aggregate – this could be market data, firm positions, or current trades. In securities finance, you also need to track open trades for margin and lifecycle actions.

Core technology solutions in this space are limited to only a handful of dominant vendors operating proprietary solutions with little flexibility. These systems are effective when they are fed the right information, which comes from many different parts of an organisation and from different systems. To plug any gaps in processes or functionality, many firms use an array of small in-house applications, or even spreadsheets running on desktops.

Technology Nirvana

Market participants generally agree that an ideal solution would be a common, flexible and robust technology platform, implemented across an organisation to allow users to access the same data. It needs to be future-proof, as benefits are reduced if a firm creates a single technology trading application and then has to create workarounds and add other applications to satisfy future changes.

Technology reality

Let's suppose you have a vendor-supplied collateral management and repo trading system which supports all trade types and actions that you need. However, you have an opportunity to do some new emerging market trades, a small volume perhaps, but new business nonetheless. So, you try to enter the trades into your existing system and immediately run into a fundamental issue – for many emerging markets currencies, there are inconsistencies in the way weekends are counted in different asset classes. These disparities don't easily fit into global systems.

The first thing to do is to speak with your vendor, who is happy to provide an enhancement for a fee that may be many times larger than all foreseeable income from these trades. What about your in-house development team (assuming you have one)? If they have the capacity, they can do it, eventually. In-house development teams are expensive to maintain and most often do not have spare capacity for such jobs, and their solution will invariably take a long time to produce. In the end, most firms capture these trades incorrectly on their books and records, and keep a spreadsheet separately with the 'real' trade model.

The alternative

It seems strange that with so much innovative technology being used in financial markets (making things faster, more efficient, less risky and cheaper) trading application technology has not evolved significantly for 40 years. We are still stuck with choosing either legacy systems (big, inflexible and expensive to change) or excel (flexible, easy to use, but not robust). Or more commonly, using both.

The alternative is a toolkit of interchangeable parts that can be unassembled and re-assembled at ease, rather like LEGO.

Modern video games are designed in such a way. The concept is called a 'game engine'. A game engine is a toolbox with all of the components required to create a game – graphics systems, sound systems, physics systems, artificial intelligence systems, etc. These building blocks are all carefully designed by experts in their respective areas. A game designer then combines the building blocks to create the game. With the right tools in your toolbox you can create a flight simulator, an adventure game, a strategy game, or any combination of these – or even something completely new. The Hudson Platform is such a tool, specifically designed for financial markets.

New technology for repo and securities finance

In repo and securities finance the world is changing at a rapid pace. From the market migrating from voice trading to ECNs, to new regulations such as the Securities Financing Transactions Regulation (SFTR), securities lending is changing faster than ever before and the current technology simply can't keep up.

The Hudson Platform is an advanced repo trading application, which has the functionality and robustness of a legacy system, and the flexibility of excel. By creating small, discreet, and well tested blocks that can be re-composed in any way, the Hudson Platform is able to solve a wide variety of issues faced in repo and securities finance, both big and small.

If you suddenly need to handle BRL or MXN dates, for example, instead of trying to modify the existing system (and probably breaking things along the way) or using excel to do some of the manual calculations, there is a better way.

Using the Hudson Platform, you simply need to create a new building block for these specific currency dates and with minor configuration changes you can put that into your workflow.

Use cases

The most obvious uses are where market requirements change and legacy systems need to be adapted, like with new regulations. These changes usually involve hugely complex relationships between instruments, currencies, margin requirements, internal management reporting and consistent external reporting.

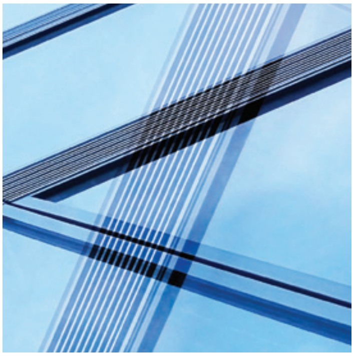
- Trade capture and position management – adding new products or workflows
- Regulatory reporting – capturing data, normalising it and presenting it for reports
- Real-time analytics
- Risk management

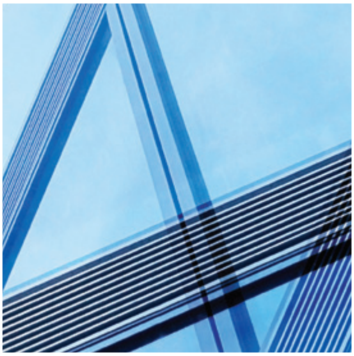
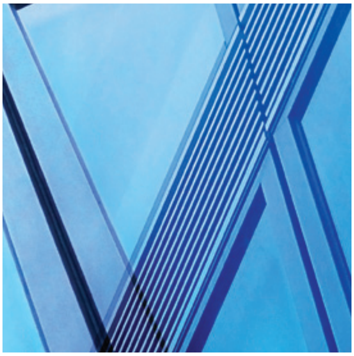
The platform can be used to link together your existing systems across capital markets – for repos, swaps, exotic instruments, plus many more. It can be used to sit on top of existing legacy systems, for edge cases where revenues don't justify the cost of system upgrades, or as a completely new trading application. The end benefit is to maximise the investment already made in your existing complex systems.

Welcome to the future

As we look back on recent regulatory changes and consider possible future regulations such as SFTR, or the third Markets in Financial Instruments Directive, perhaps the most important part of any platform is that it is future-proof. With new emerging requirements (regulatory, new business, new clients, risk management policies, etc) the core Hudson Platform can be used to modify and adapt workflows, meaning no more costly add-ons or excel spreadsheets.

Think you have a technology problem that can't be fixed? Think again.

We clear the path

OCC has the largest centrally-cleared stock loan offering in the world with approximately $80 billion in cleared loan balances. Over the last 25 years, OCC has built an innovative and unique U.S. program for securities lending transactions where OCC steps in as the counterparty (with a two percent risk weight) and guarantees the return of stock or collateral. We continue to enhance and expand access to our stock loan program in order to offer clearing solutions and capital efficiencies for our members and the entire securities finance industry.

As the world's largest equity derivatives clearinghouse, OCC is committed to providing market participants with high quality and efficient clearing, settlement and risk management services. As a Systemically Important Financial Market Utility, we work to enhance our resiliency in order to reduce systemic risk, increase market transparency, and provide capital and collateral efficiencies for the U.S. capital markets.

Tomorrow belongs to those who prepare for it today

Laura Allen
Managing director
Trading Apps

Trading Apps managing director Laura Allen offers an exclusive insight on the firm's strategic growth plan, including new innovations and senior hires

How has lockdown affected Trading Apps?

For us, this has been a very revealing period. As a company we have managed to function remarkably well during the lockdown in the UK. Likewise, and more importantly, our clients have flourished. In a period where market volumes were unparalleled and users were logging in from disparate locations, Trading Apps delivered.

You say that Trading Apps delivered. What difference did it make?

Our product performed really well under pressure. Trading Apps has a proven track record of solving for back-end system difficulties and this played to our advantage at the onset of the pandemic. Because our applications act as a wrapper around the books and records system, they nullify the perceived issues of those systems. This, combined with our automation tools, allowed the traders to cope with the heightened volumes during this period.

Did the sale to BNY Mellon hinder the growth of Trading Apps?

On the contrary, since the split we've embarked on an architecture evolution incorporating a move to microservices, Java and cloud/virtualisation infrastructure.

The original architecture has served us extremely well, allowing for the rapid release and deployment of new functionality. However, we recognised that we need to take advantage of other technologies to take the platform to the next level.

Subsequently, over the past 18 months, we introduced supporting technologies so that new microservices can be integrated with existing functionality. This also opens the door to architecture-level refactoring where pragmatic to do so.

Furthermore, our new architecture allows the developers to be flexible in their choice of programming language and framework resulting in easier and quicker functionality builds and improved productivity. All of which translates to a better experience for our clients. In terms of product, we have significantly expanded our functionality stack especially within the broker-dealer space and have continued to push our connectivity program. A prime example is Trading Apps developing a gateway to connect one of our retail broker clients to Bloomberg's securities lending trading platform, providing them with another route to market.

Additionally, we adopted the Amazon Web Services (AWS) public cloud/infrastructure as a service provider, modifying our applications to work with industry-standard virtualisation components such as EC2, S3 and Amazon Relational Database Service (RDS).

You mentioned the cloud, does Trading Apps now offer a hosted solution?

Yes, we launched a hosted product in Q4 2019 to meet client demand. Historically clients were hesitant to use the cloud, preferring to keep the application on-premise due to several factors, one being security. As cloud providers have matured they have become the 'new normal'. The turning point for us was during the summer in 2019 when one of our prospective clients said they have "now whitelisted AWS & Azure as providers".

We know from experience that our applications will create an immediate and dramatic uplift in the capability and volumes of a securities lending operation, and by offering a hosted solution we can ensure a straightforward and quick installation which reduces any downstream internal IT management burden and costs.

As mentioned before, we selected AWS as our provider. We chose to use the AWS platform as it has many advantages, such as its global reach, seamless disaster recovery with multi-site hot or warm standby instances together with being secure, compliant and reliable. Also, AWS offers flexible, automatic scalability based on demand, which is key for a product like Trading Apps.

This strategy allows our clients to manage their needs and solutions at a pace that is non-disruptive, targeted and prioritised, and ultimately under their direct control. We already have two clients using our hosted product with several more in the pipeline.

You've made some significant appointments recently, is this a part of your strategic plan?

We have always been heavily weighted to technical staff which is appropriate for a firm in our sector, but this year we have engaged senior individuals. So, yes, this is part of our strategic plan. Den Leonard, our new executive chairman, brings a wealth of business expertise to our senior leadership team and the addition of Colin Smith to our sales force gives us a different route into market participants at the CTO/COO level. However the engagement of Carol Kemm has caused the most market reaction, and so far the feedback is incredibly positive.

Trading Apps at present acts as a front-end wrapper to books and records systems so we are keen to leverage Carol's knowledge of middle and back-office functions in securities finance from her time at Global One, acting as a bridge between those areas and Trading Apps' well-developed front-end expertise.

Looking forward, Carol's expertise will be invaluable as we build out our offering.

In your opening statement, you mentioned that "tomorrow belongs to those who prepare for it today". How is Trading Apps preparing and what are your plans for the future?

We have been preparing and planning for the past 18 months and we strongly believe that the securities finance market is ready for a change, which will inevitably be driven by technology.

Prospective clients (and some existing clients) are very interested in our hosted offering and so we have been working very hard to build-out our capabilities there. As this is a relatively new area for us, the preparations included a lot of training, learning and some selective hiring.

The key point with our hosting platform is that it is not just there to support the existing Trading Apps suite, but also as a venue for new products, which we have been nurturing alongside our customer projects.

We have focused on expanding our connectivity program to provide streamlined communication between market participants. Regulatory changes such as the Securities Financing Transactions Regulation and the Central Securities Depsositioes Regulation will assist. Moreover, the International Securities Lending Association's Common Domain Model initiative will undoubtedly influence this further, allowing for increased interoperability as the hurdle of mapping field code names is eradicated.

Trading Apps will continue to push for the reduction of inefficiencies within the market, as in our experience too many transactions and trade life cycle events are still negotiated manually.

We envisage a migration from a centralised model to distributed platforms using peer-to-peer networks (and indeed networks of networks), underpinned by messaging technologies and smart contracts. Apart from the obvious improvement over email and manual processes, this will give rise to other opportunities like service sharing and a move to a Common Domain Model. Like all of our offerings as other requirements arise in the future, these would be able to be implemented quickly and therefore support market evolution.

Despite currently being a small team we think big and deliver on our promises. Our newly evolved infrastructure and architecture will allow us to transform our research and development into deliverable projects, which means 2021 is going to be a great year for Trading Apps.

Laura Allen
Managing director
Trading Apps

The front-to-back SFTR solution from MarketAxess

Our SFTR solution helps you to manage the entire SFTR reporting process, from trading and matching to reporting and monitoring.

Advantages:

— UTI generation and sharing portal

— Display and manage loan allocations

— Complete lifecycle event management

— Customized, intuitive dashboard

MarketAxess® | **30+ years** of experience in regulatory reporting.

Strong growth in uncertain times

Looking ahead at EquiLend and Stonewain Systems combined solution known as EquiLend Spire, the partnership is dedicated to providing their clients and the wider market with a modern framework and a new technological norm for years to come

Chris Valentino
Head of business development
Stonewain Systems

Despite these unimaginable and unfortunate circumstances many people are gravitating towards glimmers of hope and embers of optimism. One such pocket has emerged within the technology landscape of the global securities finance market.

Prior to the onslaught of the global pandemic Stonewain Systems and its Spire platform had been gaining strong momentum within the market. And while a natural reaction during these unprecedented times has been to retrench and pause, Stonewain Systems and its clients and prospects continue to push their agenda and initiatives forward. Projects initiated pre-COVID continue to progress and new business opportunities that had been fertilised over the past couple of years have begun to take full bloom.

“Our clients and prospects continue to impress us with their optimism, vision, and dedication to enhancing the technology that underpins and supports their securities finance business,” says Chris Valentino, head of business development for Stonewain Systems. In this time of rampant uncertainty, it is refreshing to hear about an organisation that is confident and excited about the days and opportunities to come.

For the casual observer, Stonewain and its Spire solution may not be a household name within the securities finance landscape. But for those paying close attention to the space it would be difficult not to notice the firm’s growing presence in the past couple of years. Led by the pace, example and experience of CEO Armeet Sandhu, Stonewain continues to layer additional functionality and capabilities onto a system, in Spire, that was already as rich and deep as any technology stack in the space. Armeet has surrounded himself with some of the brightest technical and forward-thinking minds in the business.

“We are constantly pushing and motivating ourselves to think outside of the proverbial box for our clients,” says Armeet. “Our objective is not to simply replace a legacy piece of homegrown or vendor technology but rather to provide our clients with the technical foundation from which they can continue to grow a sustainable business for the next 20 to 30 years.”

Strength in partnership

Stonewain Systems last year formed a partnership with securities finance tech giant EquiLend to offer a combined solution to the market, branded as EquiLend Spire. The offering combines the core capabilities of EquiLend’s trading, market data and post-trade services along with the Spire solution in its entirety. The initiative has garnered tremendous interest in the market, and several firms already have upgraded outdated technology with the state-of-the-art EquiLend Spire solution to power their businesses.

The partnership is the perfect example of two parties bringing their collective strengths to the table with the goal of providing the market with a best-in-class solution for the entire lifecycle of a transaction. From pre-trade discovery and analysis straight through to settling that trade in the market, the EquiLend Spire solution is a one-stop shop for all securities finance needs. Where in the past firms may have pieced together disparate systems for trading, post-trade, books and records, market data, benchmarking, regulatory compliance, order management and other functions, they can now do this all from one centralised, modern platform. The unified functionality of Stonewain and EquiLend in EquiLend Spire is the future of the industry.

Platform expansion

Born and nurtured within the agency lending market, Spire spent several years and iterations fine tuning and expanding its expertise and presence in that space. Clients gravitated towards the system’s speed, flexibility and sophistication as well as the knowledge and technical acumen of its leadership.

Over the years, Spire continued its evolutionary path by pivoting to the broker dealer community where it initially cut its teeth redesigning the technical architecture for a tier 1 player with ambitious aspirations to migrate off of an industry-wide books and records solution. Adding repo functionality to the system was also a natural and exciting step in Spire's progression and continues to add to the depth and breadth of the system and its capabilities.

Fast forward to the current day and the system is now catering and designed to handle all aspects and sides of the global securities finance market including institutional lenders, broker dealers, and beneficial owners.

Spire is a front-to-back system that can be leveraged as a single holistic solution or implemented as modular pieces to satisfy very specific needs. Core components include books and records, order and inventory management, accounting & billing, settlements, credit and compliance, locates, cash and collateral management, and fully paid capabilities.

Spire is a SaaS solution developed and deployed on a modern tech stack that embraces advancements such as micro services and API interfaces.

Spire is a software-as-a-service solution developed and deployed on a modern tech stack that embraces the technological advancements such as micro services and API interfaces. Spire holds its flexibility and integration capabilities as its core strengths.

Whether it is an internal integration point to a stock record or external connectivity to a depository, liquidity or post trade provider, or source of market data, Spire can handle them all. It is completely agnostic to the market and willing and able to connect to absolutely any solution that is leveraged by its clients and prospects.

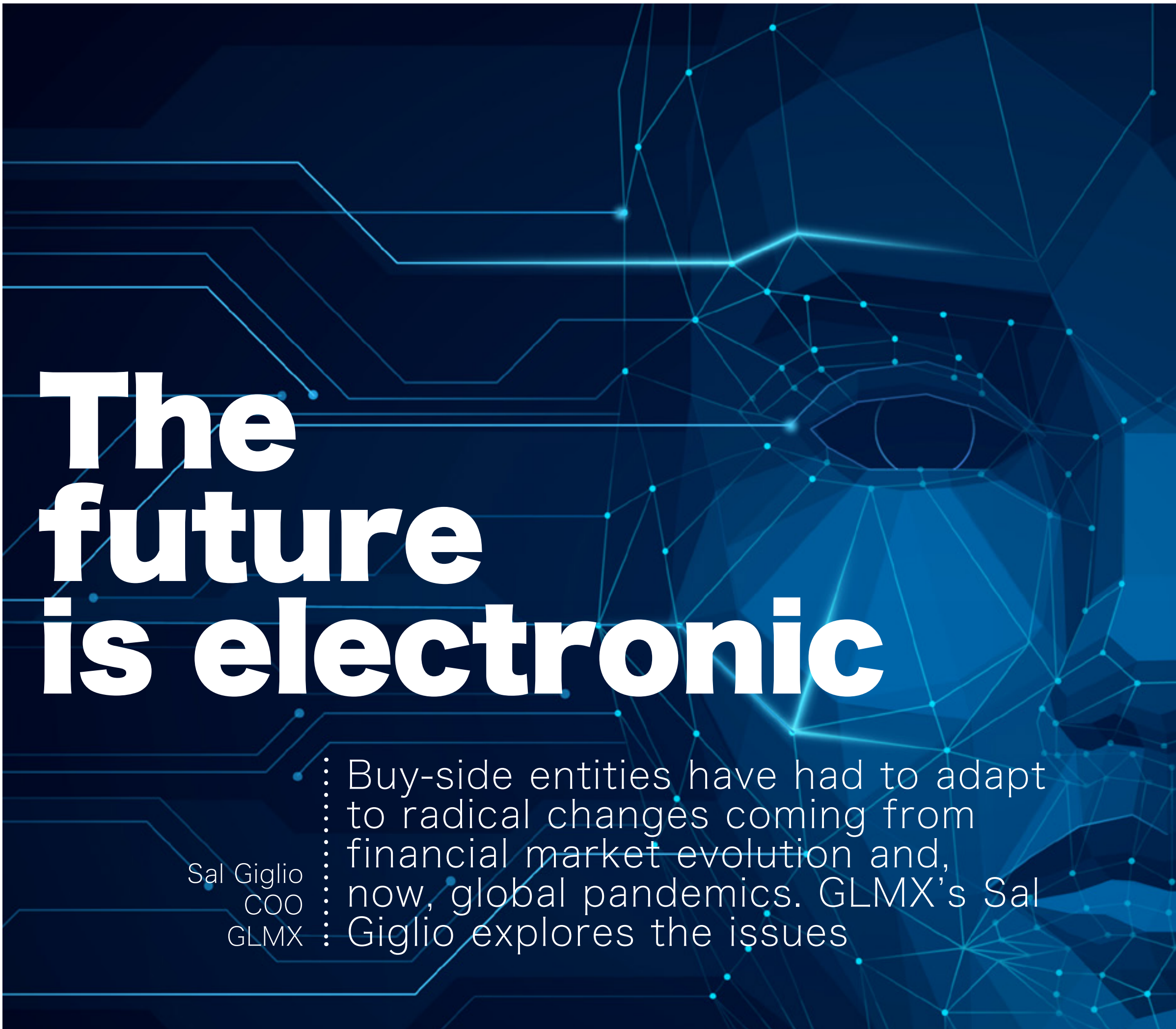
Continued growth

Stonewain Systems continues to add strategic resources to support the market's growing interest in its products and services. Seven months ago, the team added Chris Valentino, formerly the North American head of client and business development for Trading Apps, to help manage the firm's growth and continue to fortify its position in the market place. Shortly thereafter, both Justin Thiron, formerly of EquiLend and Pirum, as well as Jennifer Zorzin, former head of operations for BMO Global Asset Management, both joined the team. Jennifer had been a longstanding client of Stonewain and brings deep industry knowledge as well as more than 10 years of hands on experience with the Spire solution.

More recently, the team has added David Fink and Taugh Lynch. David comes to the firm with more than 30 years of experience in managing highly-technical engagements in the financial markets and consulting space. Taugh Lynch joins from FIS but even more importantly brings several decades of repo and securities lending experience to the team. Taugh and David will play an instrumental role in new client implementations as well as the strategic roadmap for Spire's products and solutions for the repo market. Stonewain continues to expand its engineering centers overseas with several new hires in India.

Future state

Growing against such strong headwinds is not an achievement to be taken lightly. It is not only a testament to the grit, fortitude and determination of an organization but also of the larger market in general. For years, this market has operated on legacy systems built by legacy firms. What was sufficient for yesterday will not be adequate for tomorrow. With EquiLend Spire, Stonewain Systems and EquiLend are dedicated to providing their clients and the wider market with a modern framework and a new technological norm for years to come.



The future is electronic

Buy-side entities have had to adapt to radical changes coming from financial market evolution and, now, global pandemics. GLMX's Sal Giglio explores the issues

Sal Giglio
COO
GLMX

The first few months of 2020 may seem like a time in our lives that we will soon want to forget. However, it may prove to be the turning point of work as we know it. During this time, Europe and the Americas experienced massive upheaval with turmoil being felt in our home and our work lives. In fact, the two seemingly converged overnight.

The speed at which COVID-19 spread from continent to continent caught our collective medical community and local and national governments off guard. They were not prepared to act as quickly as necessary to contain the initial spread of the novel coronavirus. Phrases such as "flatten the curve", "social distancing" and "shelter in place" entered the public lexicon. The financial system convulsed as the prospect of a recession, or worse, lay on the horizon. The Dow Jones Industrial Average fell over 30 percent in the first few weeks of March and the US treasury market experienced an unprecedented flight to safety with the 10-year note and 30-year bond touching all-time low yields of .318 and .702, respectively.

Fortunately, the past two decades have not only taught the financial community how to battle a crisis but also to prepare for one as well. Periodic testing of disaster recovery centres is the norm. Although working from home (WFH) en-masse was an option in most business continuity plans, it clearly was not a top or well-tested option. In our discussions with market participants, the transition to working from home was surprisingly smooth. Aside from not having the ideal monitor set up and maybe needing to upgrade the internet speed, financial institutions were able to transition the majority of their staffs to a productive remote workspace. Workers can access their workplace desktop computer remotely through a virtual private network (VPN), which is a cost-effective way to provide secure access to private systems from external locations over a less secure network, such as the internet. With this setup, compliance has the ability to audit activity as if the employee was sitting at their desk.

Whether the new working arrangement is referred to as working from home, working remotely, telecommuting, geographically neutral, home-shored or my favourite, ROWE – results-only work environment, the arrangement that existed prior to March will not likely return anytime soon. In fact, CEOs from major technology and financial companies such as Facebook, Google, Twitter, American Express and Nationwide are among companies allowing their employees to work from home for the foreseeable future. J.P. Morgan recently announced that offices will only be staffed at half their capacity when the lockdown ends. While other companies are advising their employees to WFH unless they have a strong business reason to be in the office. Although technology companies may be better situated to a WFH environment, financial companies have shown the aptitude to support a flexible WFH protocol.

WFH prevents the immediate return to pre-crisis work scenarios that expose us to crowded trains, buses, subways, elevators and office buildings that arise once states and cities allow firms to reopen. If the new arrangement is to become a realistic option, it needs to be as productive and secure as working from an office. Tools should be made available to be successful at home. For the longest time, executing a trade from anywhere but the trading floor was prohibited and possibly would lead to termination. But when the global pandemic hit, the physical trading floor became virtual and traders needed to find new ways to communicate effectively without straying too far from the everyday processes to which they were accustomed. While Zoom, Webex and virtual turrets have helped bridge the communication gap and keep everyone engaged throughout the day, other tools are needed. Tools that help streamline workflow and automate manual processes are essential to increase efficiency and mitigate trade entry errors, thus improving productivity. Electronic trading is a tool that provides these needed benefits and more.

Why electronic?

The repo market is following the natural electronification progression. Voice (IM/email) interaction is often followed initially by dealer-to-dealer (D2D) electronic trading, then dealer-to-customer (D2C) workflow is captured. Dealer-to-dealer electronic trading and the requisite post trade straight-through-processing has been a key component of repo trading for more than 15 years. Many benefits to electronic trading are well known since electronic trading platforms (ETP) have existed for more than five decades with Instinet (formally known as Institutional Network Corp) going live in 1969. However, the growth of ETPs did not really begin until the mid-1980s. Electronic trading for fixed income products started in the late 1990s and has become a large part of the market structure. According to the 2016 Bank of International Settlements report 'Electronic Trading in the Fixed Income Markets', 70 percent of US treasuries, 60 percent of European government bonds and 40 percent of investment-grade corporate bonds are traded electronically.

The desire to adopt electronic trading in repo is no different than in any other market. The major benefit of technology is the increase in efficiency of a business process. Technology can streamline the search for collateral or cash, thus improving the speed of execution and resulting in cost savings. Trading desks are constantly struggling to manage the mandate to grow their business with limited headcount.

Handling these inquiries over the phone, email or chat and then manually entering the trade details into a position management system is time-consuming. This is often followed by sending trade details confirmations to the clients. Naturally, this process slows down the time it takes to respond to clients. Operational efficiencies can be achieved when the trading platform is integrated with the user's technology, easing the manual burden of the salesperson or trader and their back offices. Technology allows a business to scale. A trading platform is agnostic to whether you are trading from the attic or your garage or a midtown high-rise made of glass and steel. Digitising the workflow also provides comprehensive data capture, which is essential for regulatory reporting and proving best execution.

But, why has it taken so long for the repo market to adopt electronic trading for dealer-to-client flow? Perhaps the trading protocols were the problem. Click-to-trade (CTT) or central limit order book (CLOB) trading, prevalent in the dealer-to-dealer repo market, are not practical for D2C flow since the central counterparty model does not easily apply to the buy-side of the market. Thus, balance sheet continues to be a binding constraint in the D2C space. Hence, technology had to be developed to support traditional D2C request-for-quote (RFQ) trading protocols. That is where GLMX can help.

How can GLMX help?

As an RFQ-driven, buy-side to dealer, securities finance trading platform that provides multiple pre- and post-trade connectivity options, GLMX is able to streamline existing workflows and automate previously manual processes which allow users to seamlessly negotiate and execute trades with their counterparties. GLMX technology provides functionality that supports traditional trading protocols between buy-side clients and dealers which is represented by the advanced D2C functionality supported on the platform such as package/nettable trades, open trades, cleared repo, triparty, extendable, bid/offer runs, locates and trade life-cycle management.

All asset classes, sovereigns to credit and structured products, and all currencies can be transacted on the GLMX platform. Advanced data capture helps traders make smarter trading decisions and supports regulatory reporting. In fact, GLMX provides full support for reporting under the Securities Financing Transaction Regulation.

With close to 20 dealers using GLMX, the buy-side, represented by some of the largest global asset managers, hedge funds, insurance companies, money market funds and central banks, has access to their major liquidity providers. In fact, the pipeline of new buy-side accounts and dealers is the largest it has ever been and March was a record month for volumes, daily balance and transactions on the platform.

Since GLMX is web-based and offers a variety of integration options, the platform is accessible by all sizes and types of institutions. Advanced application programming interface-connectivity is available or if users prefer, trade inquiries can be entered manually or via upload of a user format-defined spreadsheet. This is extremely helpful for users that want to avail themselves of some of the benefits of electronic trading now but may not have available internal technology support for some time or firms that want to enter into a proof of concept before fully committing. The user will be able to export the trade information into a user format-defined spreadsheet so they can batch upload into their OMS. Connectivity through third-party OMS/EMS/PMS is also available.

GLMX is known for the ability to identify and to quickly develop custom client-driven solutions. The platform offers comprehensive and intuitive technology that will continue to grow with the changing trading environment. Clearly, what will remain from this time is that some form of remote working will be part of the new way companies execute their business. In that scenario, the streamlined workflows provided by GLMX will be essential to achieve successful ROWE.

Solving the UMR puzzle

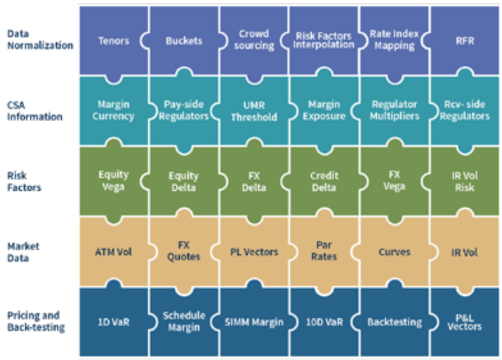
Sophie Marnhier Foy
Director product management
Calypso

Sophie Marnhier Foy examines the data challenges faced by firms in calculating ISDA SIMM inputs and warns against shifting the data problem back to the user and incurring additional cost

How do firms coming into scope in phases 5 and 6 move...

From this

To this



Feedback from participants in the first four Uncleared Margin Rules (UMR) phases suggests that providing the data required for the International Swaps and Derivatives Association (ISDA) standard initial margin model (SIMM) in the correct format is not a straightforward process. Many smaller firms which generally make up phases five and six, are finding it a very real challenge indeed. One reason is the difficulty in pulling together all the data puzzle pieces from the different systems on which they are stored and providing them in the correct format for the ISDA SIMM calculations.

How to solve the UMR puzzle

As Figure 1, overleaf, shows, achieving end to end UMR compliance is a complex, multi-step process. One of the earliest decisions to be made is how to calculate initial margin (IM) and exchange it with counterparties. Here, you can benefit by using a standard methodology in the shape of ISDA's SIMM, which was developed in conjunction with ISDA members and has gained both regulator and market acceptance in jurisdictions around the world. But, the IM generated from this model will only be correct if the inputs to the calculation are sound. The inputs required for SIMM calculations are sensitivities computed across various risk factors. Calculations must be performed in accordance with SIMM best-practice so risk inputs are generated consistently. The risk factors are used for margin calculations, but they also need to be accessed for disputes and validation, to carry out calculations on the fly and for recalculations. Plus, you will need to be able to drill down at trade level or risk factor level.

The results must be produced in the ISDA Common Risk Interchange Format (CRIF) to facilitate dispute management and reconciliation, and the calculated SIMM margin will be subject to backtesting. The size of the challenge should not be underestimated.

ISDA SIMM inputs - a threefold challenge

Why is it proving so difficult to produce the SIMM inputs? Because it involves:

- Generating a new type of risk data (bucketed sensitivities, curvature risk, vega risk), which is typically not available in the current ecosystems of phase five and six firms - either internally (using the firms' systems) or externally (because most valuation providers don't offer the level of risk granularity and sophistication required for ISDA SIMM).
- Converting the ISDA SIMM input data into a standard model and combining risk output at trade level with CSA and regulatory information to produce the CRIF file – in practice a complicated task, since data stored as part of CSA agreements are traditionally managed in different systems (such as pricers, risk tools and collateral management).
- Storing and managing market data - not only to calculate ISDA SIMM inputs, but also to generate backtesting results, which is a regulatory requirement.

When it comes to resolving these challenges, firms should bear the following in mind:

- CRIF file data are inputs for the margin calculation, and their accuracy will be challenged as part of the collateral reconciliation and dispute process. It is not just a matter of populating all the columns of the CRIF file – are you confident that the data is correct?
- Is it a good idea to delegate the complicated process of pricing, optimising and model validation to a third party? What are the regulatory or compliance implications of this?
- If you do delegate, can you be sure that the solution is fully tailored to your firm's portfolio? Will it support all the products in scope?
- If third-party solutions are integrated, how will you update and optimise the margin data throughout the day?

Options for implementing ISDA SIMM

In an ideal world, leveraging a single front-to-back solution that can handle compliance for all aspects of UMR is the most efficient and effective route forward.

Calypso offers such a solution and we have been

Figure 1: UMR COMPLIANCE END-TO-END

working with clients in-scope in the first four phases as well as with firms preparing for the final phases. I include here feedback from our clients as to why they opted for a single solution for end-to-end UMR compliance.

Data is both challenging and expensive to manage. Without a front-to-back solution, more time and money will have to be spent transforming data from system to system. This also means engaging IT and architects, complicating the process.

The fidelity of the data must also be assured, including confirmations, acknowledgements and reconciliations that all require configuration, development, and maintenance.

Having multiple systems adds complexity that can be challenging for a project such as UMR.

A single system supported by a single vendor. A lot of data and processes are tied to UMR and having them housed within one system, supported by a single vendor, has proved to be extremely helpful for planning and process mapping. Using an vendor ISDA-certified by the is also key, as UMR is a compliance exercise, mandated by the regulators.

Seamless generation of CRIF file. There are definite benefits to having full trade details within the solution that will manage UMR requirements. For example, you will be able to manage the CRIF files more easily. With a front-to-back solution, this file is generated seamlessly within the system so there is no need for transformation or communication.

Unlock additional functionality. With the trades available, you can unlock other functionality such as 'what-if' IM calculations to help forecast the desk's IM requirements. Threshold exposure calculation and monitoring will also be a simple task. Calypso's clients are finding these tools very helpful to determine, for example, which dealers they should be prioritising in legal negotiations.

They see them as additional benefits beyond the functionality required for collateral and UMR management. We recognise, however, that our world is not always ideal.

While leveraging a single front-to-back system may be the 'holy grail' for UMR, some firms may need to work within the confines of their current IT ecosystems. They may opt for a UMR solution integrated with incumbent front-to-back systems. In the context of a standalone implementation, or for specific asset classes, alternative front office systems might be required to feed the relevant sensitivities. A simple way to source the relevant data will be required, reducing the import scope to risk sensitivities. This scenario is also possible with Calypso.

Alternatively, firms may look to third-party vendors to calculate the portfolio risk sensitivities required as SIMM inputs. This is a major task as trades must be broken down into their individual elements, with the resulting data provided in a standardised format. Not all vendors provide this standardisation within their basic service offering however, pushing the problem back to the firm to resolve, potentially by involving additional providers at extra cost.

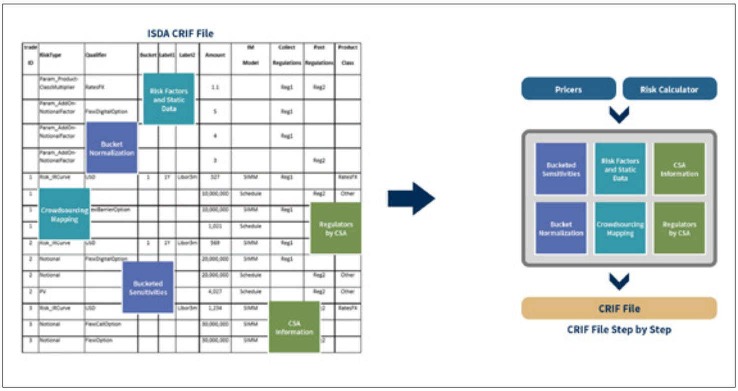
Common requirements for end to end UMR compliance

Firms coming in-scope must handle a mix and match of imported and calculated data. They need a framework that can deal with the detail and complexity of the new UMR regulation. The ideal solution for phase five and six firms should fit seamlessly into their current ecosystem and have a very light footprint in terms of operational risk.

Vendors need to offer them solutions that will not disrupt their current end-to-end process, relying on simple building blocks, using standard data formats, and offering data normalisation tools to streamline the integration process. To return to our opening premise, they need to help firms move from fragmented puzzle pieces to an ordered solution.

Five steps to achieving a successful and efficient UMR implementation

1. Break down CRIF file into logical blocks.



2. Define best way to generate accurate risk factors, either by:

- Leveraging the risk and valuation features of the incumbent front office system, which may not have been activated in the implementation to date.
- Using a third-party provider to generate the required risk factor inputs for selected asset classes. This might be the best approach if there is a legacy front office system, or it can be the first step in an implementation to meet the compliance deadline. The risk calculation can be rolled out asset class by asset class.
- Considering the schedule margin for exotic and complex products if trade volume does not justify investing in a sensitivity calculation. This is fully compliant and a pragmatic approach.

3. Normalise incoming data inputs to adjust to ISDA format

Data imported from a front office system are not directly compatible with the ISDA format, ie tenors, buckets and labels. Data normalisation for ISDA SIMM format compliance should be done by the margin solution, not pushed back to each source system. Simple processes like linear interpolation of risk metrics and data mapping will simplify the requirements for the upstream systems.

4. Separate the CSA elements from the risk factors

The most efficient way to generate all the ISDA SIMM ingredients is to separate the CSA-related inputs (margin model, margin currency, regulators) from the risk factors, i.e. the risk sensitivities calculated by product class. The regulatory parameters should also be managed separately, and not required from the Front Office system.

5. Use a single system for risk inputs, margin calculation and backtesting

End-to-end UMR compliance requires a strong analytics platform, which will be used every step of the way for risk factor and margin calculations, as well as backtesting.

Once compliance is achieved, 'what-if' optimisations tools can easily be added to an end to end UMR solution.

In conclusion

Achieving successful UMR compliance relies on having access to solutions that reduce the complexity of the process in a partnership between vendors and clients which goes beyond vendors simply requiring pre-packaged data to be provided in a mandatory format.

If our experience to date has taught us anything, it is to advise starting with a building blocks approach, where additional components can be added as new requirements emerge. In this way, we can offer clients a complete platform, capable of evolving in line with needs.

Only 70 firms are UMR-compliant today, but more than 1,100 are preparing. The recent compliance date extension to September 2022 (group 5) and September 2023 (group 6) could give these firms the extra time they need to consider a more strategic approach.

Our advice is to look at the bigger picture; to constantly keep front of mind how to convert a painful compliance exercise into an opportunity to be more efficient, to reduce risk, increase optimisation and improve profitability.

Managed services – making the case for sharing

Jonathan Adams
Managing principal
Delta Capita

Incoming regulations and other drivers of change in the securities finance market environment is putting pressure on banks to find new cost-saving measures, and better technology is part of the answer

A pivotal point has been reached for many financial institutions operating in global and local markets; the cost of doing business (operating legacy technology, meeting an overwhelming regulatory burden) in uncertain operating conditions, on occasions, teeters dangerously close to not being viable for mid to lower-tier banks and financial institutions. Factors including competition, the maturity of the business and saturation of providers continue to drive down margins.

Navigating the challenges to remain competitive

The ability to relocate operations and technology functions to lower-cost locations has lowered operating cost and bought COOs and CTOs more time to consider how the banks' technology stack can be consolidated and modernised by the retirement of legacy technology and the onboarding of new technologies. This had provided a lowering of fixed costs but the cost base remains similar; there is very little opportunity to swap elements of fixed cost for variable costs. Moreover, this approach has not been without its day-to-day practical challenges.

More recently with the global COVID-19 pandemic, there was some variability in certain locations being able to support business continuity outside their business premises; different locations varied in their ability to support working from home. Indeed, the 'world's back office' has struggled in some instances to piece together working-from-home solutions and other business continuity plans.

As seen in retail banking, the technology giants and new entrants have had the luxury of approaching technology from a ground-up perspective, not having the burden of operating and adapting the legacy technology to meet the changes in the business and meet the needs of customers.

Regulation generally, the delivery of transaction reporting specifically and the timing of compliance can rarely coincide with the adoption and implementation of new technology. We know from our own industry, operating securities finance businesses, has required firms to consume resources to make sub-optimal development choices because transaction reporting obligations have meant enhancing legacy technology when the optimal situation would be to migrate to new technology that incorporates reporting capability. If it was possible to precede technology investment with industry planning (for example adopting a common domain model) ahead of the regulatory deadlines (to have technology that is built with regulation in mind with participants having the opportunity to get in front of the changes rather than reacting to them) the outcome would be improved, easier to implement and the whole industry would collectively benefit.

When banks source new technology from fintechs they are faced with the challenges on onboarding it, integrating it into a complex network of upstream and downstream applications, ensuring that it can be supported as well as making provision in the event that provider can no longer deliver support. Technology firms also require their customers to upgrade to later versions which can result in a change overhead or be forced to support the application themselves.

In short, operating cost, regulatory burden, legacy technology and cost to change to new technology remain the overwhelming challenge when trying to become more efficient.

So what's the alternative?

Many organisations have a complex architecture which hundreds of applications, that have been added in an organic way, through mergers and acquisitions and years of incrementally responding growth and development of its various business. Modernising and consolidating that in something more efficient is a risky, lengthy and expensive undertaking.

And yet is that the direction that an established global industry collectively wants to take? There are examples of global industries outside of banking where they took a path of retaining functions that were core to their businesses and accessing an eco-system of specialist providers for non-core functions and service. Examples are the automotive manufacturers who use a vast network of specialist component suppliers whilst retaining core functions (e.g. product development, assembly) and the airline industry in its own way has done the same.

By developing standardised services on multi-tenanted platforms to multiple airlines, these specialist providers were able to achieve utility-scale and the platform investment not possible for a single airline operator. In turn, this allowed the airlines to focus on differentiation of proposition. The result was that they were able to eliminate the fixed cost of providing those services/functions internally and competitively source those services on a usage basis. The outcome was improved cost/income ratios, better quality support services and enhanced customer experiences, resulting in improved returns on equity.

It appears that as an industry matures and has multiple providers over multiple geographies, a secondary set of providers support that industry with products and services that they, in turn, become expert and competitive in providing. By focusing on their particular niche across multiple clients, they are better placed to adapt to and prioritise change than an organisation that has multiple functions and supporting technologies to prioritise. The client buys the services and no longer has to be burdened with maintaining the technology platform it is delivered on and benefits from a dedicated set of expertise focused purely on that service.

So, how could that apply to banking?

For a multitude of reasons, regulation is driving the banking/capital markets industry in a direction whereby functions irrespective of the organisation have to be delivered and operated in a standardised way. The Securities Financing Transactions Regulation (SFTR) has forced the securities finance industry to standardise the treatment of the inter-life events such partial returns so that the unique transaction identifiers continue to match during the life of the trade.

The industry associations are actively working towards a common domain model which in turn will influence the next generation of technology. But what if complex non-core functions become services that could be purchased on a volume-linked basis (cost-flexing with revenue)? And the technology for those services was no longer a maintenance concern? It would unburden the purchaser of ever competing technology priorities and create bandwidth and budget to facilitate a strategy for technology for the core businesses. Moreover, those service providers are able to deliver those in their clients preferred geographical locations due to the cost-effectiveness of delivering the same service to multiple clients.

This approach not only brings economies of scale and assists in accelerating clients technology change programme for core functions but lowers the barriers entry to new participants and new geographies.

Delta Capita

Delta Capita currently provides managed services to support financial service clients' know-your-customer and client lifecycle management functions. It also has a well established managed service in the structured retail products space. Now as part of the Prytek Group, it is now positioned to broaden its managed service offerings to further support banks and financial institutions.

It has made strategic senior executive hires to support its strategy. Specific to capital markets, Gary Bullock now heads up the post trade workstream (which includes the existing securities finance, prime services and collateral team). Gary McClure is leading the charge to develop and bring to market a range of managed services (operations and technology) in line with the Delta Capita principle of being able to deliver those services in the clients' locations with teams that will have expertise and empathy for their clients.

Think like Sherlock Holmes: Time to look harder at the data

Martin Walker
VP, product management, securities finance and collateral management
Broadridge

Regulatory and market changes intensify the need to use data more effectively in securities finance. Broadridge's Martin Walker explains

It can be very easy to miss the key pattern in a sea of information, unless of course you are Sherlock Holmes. In the adventure of 'Silver Blaze', Holmes and Watson are confronted by a multitude of seemingly conclusive evidence about the disappearance of a famous racehorse and the murder of its trainer. However, among the evidence, Holmes notices one data point missed by the police, who had been fixated on more tangible clues such as knives, torn clothing and a bleeding suspect. Holmes meanwhile found out the trainer's dog had not barked on the night the racehorse had been stolen. The clue that let him unravel the mystery and find the truth. If you have not read the story, I thoroughly recommend it.

A real story about data

Capital markets is another area seemingly drowning in data, but where data presented the wrong way and without sufficient context can quickly lead to the wrong conclusions. In a previous role, I was told by one of my team that the New York trading desk was doing very well because of a sudden growth in trade volumes.

"New York are doing really well, their trade volumes in New York have shot up."

"Really? New York volumes, curious. How did you notice?"

"Their end-of-day batch is taking longer to complete, so I looked at the volumes and they have exploded." I felt a little perplexed, having spent a great deal of time with a trading desk that was far from dynamic, so I looked in their trading books. Their trading books were full of thousands of tiny borrow trades which were opened each day and never closed. I printed out a report and went to see the London-based business manager.

"Were you aware of the increase in volumes in the US?"

"Yes, I heard they were doing a lot more business, finally pulling their weight."

"Look at what is making up all the volume," I said, pointing to the list of thousands of minuscule trades.

"Oh, why are they booking all those tiny trades? The cost of settling and processing them is much bigger than the profit and loss (P&L) on the trades."

The New York desk has been adjusting the hedging in their index arbitrage strategy a little too precisely, making no real impact on front-office P&L or on the management of risk, but generating huge operational costs. The business manager quickly made the traders clean up the mess in their books and change their booking practices. The number of trades quickly went down without impacting revenues but it led to a significant reduction in costs.

One of the key characteristics of securities lending compared to other capital markets businesses is that it has always been more front-to-back. What happened in operations or settlements had a significant impact on trading and overall business profitability. In a world where profit margins have been significantly reduced by the decline of dividend-related trading, the impact of front-to-back issues has become ever more noticeable in the overall profitability.

Traditionally the key types of data used related to market data on pricing, shares-on-loan, dividend rates and internal data on trades and on positions. With the introduction of two new regulations in the EU (and the UK), namely the Securities Financing Transactions Regulation (SFTR), and the Central Securities Depositories Regulation (CSDR), the need (and opportunity) to look at a wider range of data will become increasingly important. This will provide valuable insights around operational costs, but also the potential costs of non-compliance. In the US market, the rules relating to resolving settlement failures (SEC Rule204 of Regulation SHO) can have a significant impact on profitability. This is the case both directly from fines and indirectly from restrictions on shorting that take effect if the rules are not complied with.

Two rocky paths to data-driven decision making

Two related approaches that have been increasingly popular in recent years are:

- Creating data stores specifically for the analysis of data with a business intelligence (BI) tool that allows front office or operations to drill into data and look for patterns
- Creating colourful dashboards
- Both of these approaches can add a lot of value if properly thought out. But they can also be a very effective way to waste money without generating any return on investment.
- Datastores combined with BI can result in a great deal of money being wasted if they are created with little consideration given to business context. A trader or an operations manager comes to work each day trying to answer a set of questions, even if those questions are not explicitly written down and asked. The operations manager is trying to understand what is generating their costs, why on some days are they getting too close to settlement deadlines and related questions. The trader wants to know who to trade with, who to recall stock from, where to locate stock, etc. Simply giving them the tools to drill up and down in a large set of data may get them the answers (or not), eventually. But is not terribly efficient compared to giving them a view on the specific data and metrics that answers their questions.

Dashboards can be even more of a false friend. Figure 1, overleaf, was created simply to show that something can look scientific from a distance and may be reviewed intently by senior managers on their smartphones for a few minutes each day, but may add no real value at all.

This can result from:

- Irrelevant metrics - where changes in the values cannot ever drive any changes in management decisions
- Ambiguous metrics – where it is not clear what is being measured
- Poor quality data – the dashboard may look impressive but the data used may be gathered in manual and highly error-prone ways

Think like Holmes

If we think of the questions that need to be answered in securities finance, they ultimately equate to identifying patterns (or changes to patterns) in data. Occasionally, the need is to look for a pattern that should have changed when something else changed but did not. The normal behaviour of the victim's dog in 'Silver Blaze' was to not bark in the company of its owner. However, the theft of a horse from the stables and the violent death of its owner should have caused the pattern of not barking to change. In our real-life example, the large increase in trade volumes would ordinarily have been associated with an increase in front office P&L.

More commonly, we need to easily identify the patterns that will become ever more important in front-to-back

processing of securities finance transactions. For instance, what is driving settlement failure rates? Fines and buy-ins under CSDR will soon start eating into securities finance's increasingly narrow profit margins. Good analytical tools should quickly point to the relative importance of factors such as counterparty, custodian, market, trade type and security type. They should also point towards business processes that urgently need improvement. Broadridge analysis of fails in securities finance, suggest fail rates on returns are up to three times higher than those on the initiation of a trade.

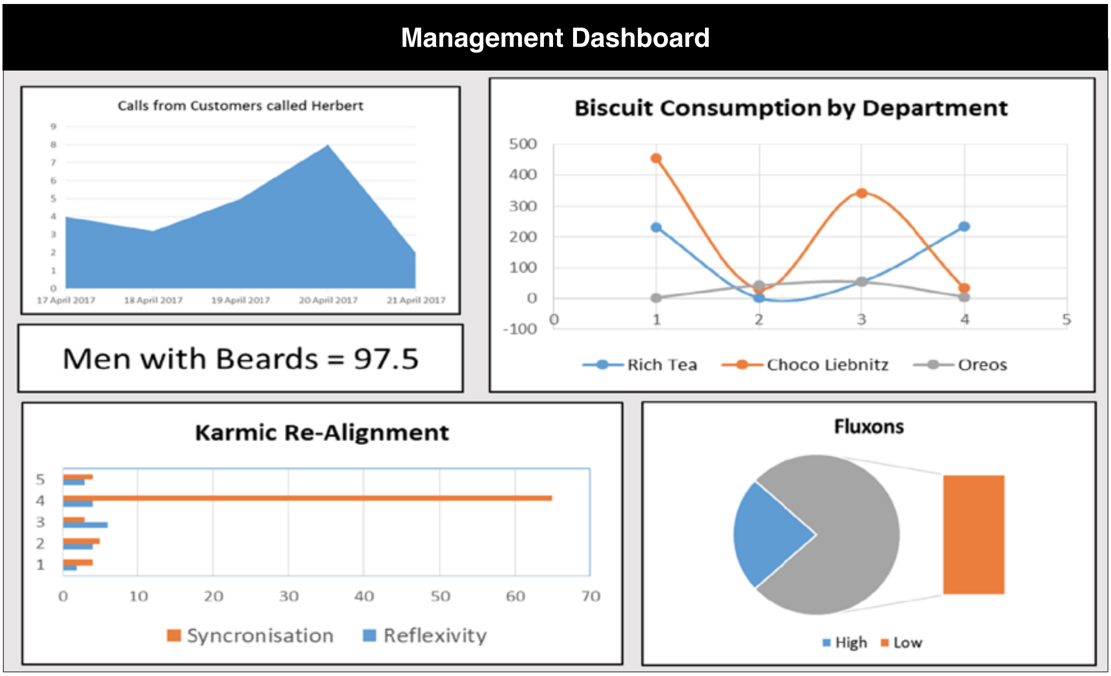
Time to look at rationalising and perhaps increasing automation in this key part of life on the trading desk.

Analysing and attempting to resolve SFTR-related breaks looks like it will soon merge into a small but costly cottage industry. An industry that will not just impose the cost of new functions but drain the time of the front office in answering queries. However, based on recent experience in regulatory reporting, simply attempting to fix all breaks (even for the fundamental reconciliation of trade and legal entity identifiers) may simply break trading desks because of the volume of issues. A potentially better, analytics-driven approach, would be data-driven. Data presented in the right way can allow the rapid identification of the root causes of errors. Fixing the problems at source and progressively increasing matching rates may be a better way to please regulators than aiming for perfection, failing and drowning in issues.

You are probably thinking by now, "what analytics framework would have allowed Sherlock to solve the mystery of Silver Blaze even quicker?"

Sadly that would give away the ending to those that have not read the story. So ignore the irrelevant metrics and go read the story.

Figure 1

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Broadridge, a global fintech leader with $4 billion in revenue, provides communications, technology, data and analytics. We drive business transformation with solutions for enriching client engagement, navigating risk, optimising efficiency and generating revenue growth, helping our clients get ahead of today's challenges with products that streamline and simplify the securities finance industry.

Broadridge offers a suite of global, front to back office securities finance solutions for buy side and sell side. This includes integrated or standalone systems for securities lending, repo, collateral management and collateral optimisation, and an end to end transaction reporting solution for SFTR and CSDR.

Broadridge's solutions help customers to comply with new regulations, increase efficiency, improve strategic decision making and make more intelligent use of capital, balance sheet and liquidity.

For more information about Broadridge and our proven securities finance, collateral management and transaction reporting solutions, please visit our website.

Hervé de Laforcade
Global head of marketing
+33 (0)1 7083 5230

www.calypso.com
solutions@calypso.com

Calypso Technology, Inc. is a cloud-enabled provider of cross-asset front-to-back solutions and managed services for financial markets, with over 35,000 users in 60+ countries.

These solutions include our award-winning post-trade processing, collateral and securities finance platform which helps clients resolve today's complex collateral management needs, offering:

- End-to-end solution with seamless integration
- Centralised, real-time view of inventory
- High levels of STP through configurable workflows
- Triparty integration
- Connectivity with AcadiaSoft MarginManager
- Flexible platform to adapt to changing needs
- Deployment on-premise, hosted or hybrid

Providing coverage of both bilateral and cleared products, Calypso helps buy-side, sell-side and service providers to minimise use of cash, and reduce margining and funding costs.

Complete automation of collateral management operations, combined with algorithm-based allocations, enable clients to find the 'cheapest to deliver' collateral and reduce the number of collateral calls and disputes.

Collateral trading desks can use Calypso Securities Finance to access repo and securities lending markets to release contingent liquidity and reduce overall funding costs.

The solution is compliant with new regulatory requirements such as the Uncleared Margin Rules (UMR) and the Securities Financing Transactions Regulation (SFTR).

Markus Büttner
Founder & CEO
+49 (0)173 672 6225
markus.buettner@comyno.com

Admir Spahic
COO & head of consulting
+49 (0)177 436 7027
admir.spahic@comyno.com

Frank Becker
COO & head of sales
+49 (0)151 4249 0801
frank.becker@comyno.com

www.comyno.com

Comyno is a specialised fintech company with more than 15 years of experience in securities finance, focusing on software and consulting. We work with leading private and public financial institutions, clearing houses and triparty agents, combining our expertise in strategy, processes and technology.

We have extensive experience in the provision of standardised and tailor-made solutions, increasing functionality and efficiency across the entire value chain. Our innovative strength is demonstrated by our expertise in the area of blockchain and DLT and its practical application, e.g. its usage in our trading software.

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- Project & Program Management
- Business Analysis & Consulting
- Technical & Infrastructure Consulting
- Product Architecture & Design
- Software Development
- Blockchain Development

Software Solutions

- C-One Securities Finance
In-house/Platform Hybrid Solution
- C-One Connectivity
Standard Connectivity to Systems and Providers in SecFinMarket
- C-One SFTR
Regulatory Reporting Solutions

Jonathan Adams
Head of securities finance practice
+44 (0) 203 714 1870
Jonathan.adams@deltacapita.com

www.deltacapita.com

Delta Capita formulates and delivers strategic business and technology change for investment banks and investment management firms. We combine advisory, solutions and delivery to provide an end-to-end consultancy service. Our cross-discipline teams and IP-based solutions are accelerators for solving complex business problems and the delivery of tangible client value. Delta Capita specialises in strategy, business operating models, technology advisory and solutions, as well as programme management with PMO services.

Prime finance and brokerage together with securities lending and collateral are key focus areas for Delta Capita. We define global solutions based on vendor technologies to help our clients find optimum solutions to their business problems. This includes optimisation tools to manage collateral, trading platform solutions, business migrations locally or across jurisdictions, regulatory reporting, and simplification or automation of work flows to increase efficiency.

Delta Capita works front-to-back across equites, FI, FX, derivatives, structured retail products, risk, regulatory compliance, treasury and ALM. Further, we provide specialised managed services in a number of areas including structured retail products, regulatory compliance, and metrics and performance monitoring.

Brandon Neer
Founder
brandon@delta1.com

Harris Bock
Co-founder
harris@delta1.com

Jason Lefkowitz
Co-founder
jason@delta1.com

+1 212 321 0224

www.delta1.com

Delta One - transparency, liquidity, Actionability

Delta One is a trading technology company focused on innovation in the equity finance area. It has been developing software for use in the tracking, pricing, and matching of synthetic borrow transactions in the US listed options market since 2016.

Their front-end software solution gives users unparalleled access and real time price transparency for conversions and reversal transactions. The customisable, intuitive, user friendly interface uses AI and machine learning to match lending and borrowing interest in real time. The platform gives users visibility into current and historical implied rates in one easy to use interface and allows the user to make trading and pricing decisions across entire portfolios of equity securities.

The leadership team has more than 55 years of combined trading and trading technology experience. The team is fast and flexible, and is continuously looking to improve client's access to liquidity and transparency in the US listen options markets.

Paul Lynch
Managing director, global head of products
paul.lynch@equilend.com
+1 212 901 2281

Dan Dougherty
Managing director, global head of sales & client relationship management
dan.dougherty@equilend.com
+1 212 901 2248

www.equilend.com

EquiLend is a global financial technology firm offering trading, post-trade, market data, regulatory and clearing services for the securities finance, collateral and swaps industries. EquiLend has offices in New York, Boston, Toronto, London, Dublin, Hong Kong and Tokyo.

EquiLend's services include:

- NGT, the securities finance industry's most active trading platform
- Collateral Trading, enabling funding and financing desks a centralised way to execute and manage trade structures with their counterparties
- Swaptimization, automating global equity total return swaps trading workflow
- EquiLend Post-Trade Suite for securities finance operations
- DataLend, providing performance reporting and global securities finance data to agent lenders, broker-dealers, beneficial owners and other market participants
- EquiLend Clearing Services, offering trading services and CCP connectivity
- EquiLend SFTR, a no-touch, straight-through solution for the Securities Financing Transactions Regulation
- EquiLend Spire, a front-, middle- and back-office platform for securities finance businesses

David Lewis
Senior Director
david.a.lewis@fisglobal.com

Ted Allen
VP Capital Markets Collateral
ted.allen@fisglobal.com

US: +1 877 776 3706
EMEA: +44 20 8081 3840
APAC: +63 2 8802 6299

www.fisglobal.com

FIS is a leading provider of technology solutions for merchants, banks and capital markets firms globally. Our more than 55,000 people are dedicated to advancing the way the world pays, banks and invests by applying our scale, deep expertise and data-driven insights. We help our clients use technology in innovative ways to solve business-critical challenges and deliver superior experiences for their customers. Headquartered in Jacksonville, Florida, FIS is a Fortune 500® company and is a member of Standard & Poor's 500® Index.

Sitting at the intersection of technology and finance, FIS is focused on delivering fresh ideas and inventive solutions to help our customers adapt and thrive in an ever-changing environment. With a blend of software solutions, cloud infrastructure, global service capabilities and deep domain expertise, FIS is capable of supporting virtually every type of financial organisation, including the largest and most complex institutions in the world.

Whether on the supply or demand side, FIS' comprehensive range of market data, securities finance and collateral management solutions gives our clients the efficiency to run smarter operations and the agility to capitalise on opportunities.

Glenn Havlicek
CEO

Sal Giglio
COO

Sales@GLMX.com
+1 866 610 4569 (GLMX)

GLMX.com

Combining Wall Street expertise with Silicon Valley technology, GLMX has developed a thriving ecosystem for the negotiation, execution and management of securities financing transactions (SFT). Using state-of-the-art streaming technology, GLMX facilitates a wide array of SFT including multi-variable negotiation, lifecycle events management, STP, reporting and data management. Funded by leading Silicon Valley venture capital firms, GLMX brings unparalleled trading and liquidity management workflow efficiencies to existing counterparties in the global securities financing markets.

The GLMX solution provides intuitive technology, extremely quick development times and enhanced customisation. These characteristics allow GLMX to create a premium user experience.

GLMX technology supports:

- Web-based, RFQ-driven, Multi-variable Negotiation
- Bilateral, cleared, and triparty
- Cross-currency, locates, rate runs, packages
- Extensive data capture
- Trade life-cycle management
- Full SFTR reporting
- Pre and post trade API
- Pre-trade control functions

Guido Stroemer
CEO
guido.stroemer@hqla-x.com
+352 263 791 28

Nick Short
COO
nick.short@hqla-x.com
+352 263 791 29

www.hqla-x.com

HQLA^X is an innovative financial technology firm founded by financial market practitioners. Our core clients are financial institutions active in securities lending and collateral management, and our shareholders include market-leading service providers in the global financial ecosystem.

Our long-term vision statement is to accelerate the financial ecosystem's transition towards frictionless ownership transfers of assets. We aim to achieve this vision by collaborating with our clients to design, develop and deliver innovative, technology-driven solutions for specific pain points in the financial markets.

Our immediate value proposition and mission statement is to improve collateral mobility amongst market-leading triparty agents and custodians. In the HQLA^X operating model, there is no movement of securities between custodians. Instead, a digital collateral registry is used to record ownership of baskets of securities, whilst the underlying securities remain static in the custody location of the collateral giver. This enables banks and broker dealers to execute delivery versus delivery (DvD) ownership transfers for baskets of securities across triparty agents and custodians, providing capital cost savings due to reduced intraday credit risks and intraday liquidity requirements, as well as reduced operational risks.

Michael Walliss
CEO
michael.walliss@hudsonfintech.com

Troy Peterson
CTO
troy.peterson@hudsonfintech.com

Dietmar Nowatschek
CPO
dietmar.nowatschek@hudsonfintech.com

www.hudsonfintech.com

Bespoke, modular and flexible solutions to simplify a complex world

Founded in 2019, Hudson Fintech is a specialist software development company serving the capital markets with advanced technological solutions. Its flagship product, called the Hudson Platform, is a modular platform designed for building complete trading systems.

The Hudson Platform is unique. It uses entity-component-system (ECS) technology, a revolutionary approach tailored to support all aspects of trading workflows and reporting requirements. Crucially, the platform offers tremendous flexibility, enabling adjustments and amendments without the need for expensive upgrades or lengthy regression testing. Equally, the design of the platform means staged implementation is perfectly possible with no downtime for existing legacy systems.

The result is an agile system easily capable of servicing typical end-to-end workflow demands – from trade capture and real time analytics through to risk management and reporting. The module-based approach integrates seamlessly into existing systems and is fully scalable.

Sunil Daswani
Head of securities finance
sdaswani@marketaxess.com
+44 (0)20 3655 3577

www.marketaxess.com

MarketAxess Post-Trade is a leading provider of trade matching and regulatory reporting services and is a trusted source of comprehensive and unbiased pricing and liquidity information to the global securities market. MarketAxess processes over 1 billion cross-asset class transactions annually on behalf of its community of over 600 entities including approximately 12 million fixed income transactions. MarketAxess operates an approved publication arrangement (APA) and approved reporting mechanism (ARM) for MiFID II trade and transaction reporting. Additionally, MarketAxess provides support for other regulatory regimes such as SFTR helping clients automate, standardise, and streamline their reporting at every stage.

MarketAxess is headquartered in New York and has offices in London, Amsterdam, Boston, Chicago, Los Angeles, Miami, Salt Lake City, San Francisco, São Paulo, Hong Kong and Singapore. For more information, please visit www.marketaxess.com.

John Davidson
CEO

David Prosperi
dprosperi@theocc.com

www.theocc.com

OCC is the world's largest equity derivatives clearing organisation. Founded in 1973, OCC is a cost-effective, customer-driven organisation that delivers world-class risk management, clearance and settlement services to 20 exchanges and trading platforms for options, financial futures, security futures and securities lending transactions. It operates under the jurisdiction of the US Securities and Exchange Commission (SEC) and the US Commodity Futures Trading Commission (CFTC). OCC has been designated by the Financial Stability Oversight Council as a Systemically Important Financial Market Utility (SIFMU), which reflects OCC's critical role within the US financial markets infrastructure. In 2018, OCC cleared 5.24 billion equity derivatives contracts, representing its highest volume year ever. In 2019, OCC cleared 4.97 billion equity derivatives contracts. OCC stock loan activity was down 4.7 percent with over 1.3 million new loan transactions.

Phil Morgan
Chief Operating Officer and Head of Sales
Tel: +44 207 220 0965
Email: Philip.morgan@pirum.com

www.pirum.com

Pirum offers a secure, centralised automation and connectivity hub for global securities finance transactions (stock loan, repo & OTC), enabling complete automation of the post trade and collateral lifecycle. Our position within the securities financing market enables clients to seamlessly access counterparts, triparty agents, trading venues, market data companies and CCPs, as well as regulatory reporting facilities.

We combine an in-depth understanding of both the securities finance industry and the most innovative technology to provide highly innovative and flexible services. Supporting established and emerging financial institutions, Pirum's pioneering approach consistently reduces operational risk while increasing processing efficiency and profitability.

Pirum's innovative designs and customer focus have resulted in widespread industry recognition and multiple awards. Pirum was most recently named Global Post-Trade Service Provider of the Year at the International Securities Finance 2019 Awards, and our CollateralConnect product was named as the winner of the software solution award, for the second year in a row.

Brett Weiss
brett.weiss@s3partners.com
+1 212 715 4326

Justin Freedland
justin.freedland@s3partners.com
+1 212 715 4366

John Clancy
john.clancy@s3partners.com
+1 212 715 4322

Dean Fabrizio
dean.fabrizio@s3partners.com
+1 212 715 4379

www.s3partners.com

S3 Partners is a market-leading financial data and technology company that provides pricing and analytics for capital markets and solutions that connect clients to their critical investment data. S3 Pricing and Analytics: Market standard real-time short interest and financing rates, crowding signals, accurate float and days to cover for more than 40,000 global securities. S3 Data Hub: A suite of tools and APIs that instantly connects users and enterprise systems to prime broker and custodian platforms for seamless access to fully cleansed client Positions, holdings, cash, margin and swap data. S3's product allow for optimised consumption for individual users and enterprise-wide usage via: interactive desktop products, the data hub, enterprise data, and its SaaS platform.

S3 is a market standard source for the financial news media such as Bloomberg, WSJ, CNBC and FT. S3 maintains an exclusive distribution platform through unique relationships with its channel partners: Bloomberg, Citco, Refinitiv, Factset and Nasdaq.

Armeet Sandhu
CEO
armeet.sandhu@stonewain.com
+1 973 788 1886

Chris Valentino
Business development
chris.valentino@stonewain.com
+ 1 646 734 9239

www.stonewain.com

Stonewain Systems Inc. develops software solutions for the securities finance industry. Our modular and scalable securities finance platform—Spire—is a comprehensive, fully-integrated solution that combines industry-specific functionality with ground-breaking technology and automation. Our deep domain knowledge lends itself to relevant functionality resulting in accelerated workflows, greater operational efficiencies and lower costs.

With unprecedented power, more capable functionality, open standards compatible with a wide range of solutions, and a fixed-cost model that holds steady through volatile markets- Spire has emerged as the preferred choice of the industry.

As a state-of-the-art comprehensive, full-service platform, or utilising select modules that complement your existing technology, Spire enables your business to remain nimble and responsive to the industry's changing needs.

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Agency, Principal and Third Party Lending
Repo / Financing
Collateral management and optimisation
Cash management and reinvestment
Regulatory locates
Global books and records
Credit, Risk and Compliance
Regulatory locates

Laura Allen
Managing director
laura.allen@tradingapps.com
+44 207 608 5538

www.tradingapps.com

At Trading Apps we ensure that our software provides increased revenue with decreased risks, along with intuitive, real-time functionality for the user.

Trading Apps has a history of delivering extensive connectivity and completely automated trading for some of the largest organisations within the securities finance market. Moreover we know from experience that the initial relatively straightforward installation of our applications creates an immediate and dramatic uplift in the capability and volumes of a securities lending operation.

Trading Apps enriched static data and complex account mapping capabilities reduces the challenges of back-end system difficulties too. Our applications act as a wrapper around the books and records system, nullifying the perceived issues of those systems. Furthermore, automated trading including lifecycle events ensures trades are booked correctly thereby enabling an increased settlement ratio.

We encourage a hosted environment where we can add functionality quickly and seamlessly providing further efficiencies and automation, continually advancing the performance of our products.

We treat every customer as an individual and deliver our software solution in a collaborative approach that gives them control and decision points along the journey. The process will be more agile and manageable and experience has shown us a partnership approach of this kind results in the best outcomes for customers.

REDEFINING SECURITIES FINANCE EXECUTION

GLMX
GLOBAL LIQUID MARKETS

www.glmx.com
sales@glmx.com
US: +1 (866) 610-4569 (GLMX)
UK: +44 (0)20 3637 9678
@GLMXTech
linkedin.com/company/GLMX