

A hand is shown in the foreground, reaching out to interact with a complex, futuristic digital interface. The interface is composed of various glowing blue and white elements, including circular patterns, lines, and text. The background is dark, making the glowing elements stand out. The overall aesthetic is high-tech and modern.

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## Embrace or fall behind

With an increase in computing power, an abundance of data and new technologies, innovation is taking place at a pace never seen before. Technology has become such a large part of everyday life, and that's no different for securities finance firms.

In this year's Securities Lending Times Technology Annual, industry participants suggest that as the financial environment grows, it is important for those standing on the sidelines to begin to play an active role to transform manual processes into automated ones.

Ongoing work from market participants to utilise technology solutions is increasing and not just to meet regulatory requirements such as the Securities Financing Transactions Regulation but also to create efficiencies and manage risk.

Although firms remain competitive, some are collaborating to create platforms and networks which offer straight-through processing, connectivity and distributed ledger technology.

Find out how securities finance firms are utilising these new platforms and networks to tackle challenges, replace manual processes and embrace the endless opportunities.

Thank you to all our partners, whose sponsorship and help has been instrumental in putting this handbook together.

**Becky Butcher**  
Editor

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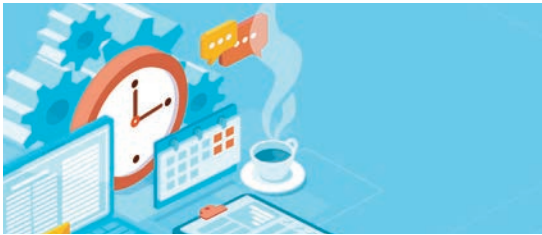


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## Korea's FSC reg sandbox accepts stock lending blockchain platform

Korea's Financial Services Commission (FSC) has accepted a stock lending platform based on blockchain technology offering stock lending and borrowing services for individual investors.

The stock lending blockchain platform was one of nine financial service providers accepted into its financial regulatory sandbox.

The nine financial service providers were accepted out of 19 applications shortlisted for priority review and were allowed to test their services and products in the regulatory sandbox. For the remaining 10 applications, the FSC will soon decide whether to accept them into the regulatory sandbox.

## R3 to expand Corda platform

R3 is planning to expand its Corda platform after gaining momentum across various industry sectors. The firm has also reorganised its corporate structure to best support aggressive hiring in all areas. It suggested that

its partner community (including central banks and regulators) has grown so quickly that they're expanding the team in support of it.

The update from R3 explained that at its quarterly board meeting in early March, it took the new step towards leveraging "our strong capital base to position us as the blockchain for business for the long term".

The board also approved the creation of a dedicated corporate development function. According to R3, it will be tasked with "supporting early-stage companies building on the Corda platform; and exploring a variety of potential joint venture, acquisition and related activities focused on later stage companies aligned with R3's vision".

## ASX making headwinds in technology

The Australian Securities Exchange (ASX) is making headwinds in the technology space, Tim Hogben, COO of ASX, said.

In his Australia welcoming remarks at the PASLA/RMA conference in Sydney, Hogben said that while technology might erode some of the traditional values across many industries, many consumers have benefitted and they now have a substantially higher value proposition.

Hogben cited: "The winners seem to be the large technology companies rather than the traditional services providers. Why aren't we following their lead? It is hard and expensive digitising businesses."

"While our industry has made significant process in automating and straight through processing, it is generally having trouble consolidating the significant infrastructure. Why? Because it is really complex and is a global issue, not just an issue in Australia."

He continued: "Let's consider this, you can order and get espresso coffee specifically held in a warehouse delivered to you in five hours, I'm also told you can order an outfit online and have it delivered in two hours, and yet it takes two days to move an ownership of shares held on a hard drive. Customers question whether they will get the same service in financial services as they get





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in other parts of their personal lives. The answer is that they should.”

Meanwhile, Hogben explained that the problem is that service providers can't access the information and sources of truth quick enough and share it to those that need it.

As later discussed at the conference, Hogben explained that ASX has devised a strategy to meet the fundamental needs of delivering more rich and accurate data faster.

He commented: “We believe that this would include client experience, efficiencies, reduce operational risk, deliver a better market experience and lower costs.”



### SEB selects DTCC global trade repository

Skandinaviska Enskilda Banken AB (SEB) has selected Depository Trust & Clearing Corporation (DTCC) as its global trade repository service to meet regulatory obligations under the Securities Financing Transactions Regulation (SFTR).

To streamline client adoption of the service, DTCC recently added data transformation services to its SFTR offering.

DTCC has also made partnership agreements with several technology firms, including Broadridge, EquiLend/Trax, FIS Global, IHS Markit/Pirum, Murex, RegTek.Solutions and SimCorp.

Petra Tigerholm, head of markets regulatory reporting at SEB, commented: “SEB has a longstanding relationship with DTCC and is very satisfied with our cooperation. Right now, SFTR is a major focus area, so choosing the right partner to deliver this project was of the utmost importance to us. We look forward to working together to deliver regulatory compliance for ourselves and our customers.”

### Securities lending sees growing emphasis on data collection

There is a growing emphasis on data collection in the securities lending space, according to Matt Wolfe, OCC vice president of business development.

Wolfe explained that decisions are being influenced by data analytics.

Wolfe suggested that the future of securities lending will be data-driven and the leaders will be those that make the most effective use of data.

He noted that strong personal relationships have always been a cornerstone of the securities lending marketplace and while they will always be important, the growing emphasis is towards the data.

According to Wolfe, one of the catalysts driving an increased emphasis upon data is Securities Financing Transactions Regulation (SFTR).

SFTR is forcing market participants to make technology investments to collect data for regulatory reporting.

The ability to collect more data and integrate systems across entities can make inventory more accessible, he added that it is all about utilisation.



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Wolfe also said that he expects to see two technology changes in the securities lending space that will benefit beneficial owners: machine learning and distributed ledger technology (DLT). Firms and vendors have been investing in new technologies that could enable participants to apply machine learning in order to discover surprising and valuable insights.

For example, Wolfe explained, programmes that can anticipate changes in the demand for securities enable firms to make more informed decisions about when to lend and re-rate securities.

Similarly, he said that DLT has the potential to not only improve the transparency for beneficial owners, but also to potentially enable them to take a more active role in their lending programmes.



### RHB Bank goes live on Murex's MX.3 platform

RHB Bank Berhad (RHB Bank), a Malaysian financial services group, is now live on Murex's MX.3 to meet its Islamic and financial needs in the Association of Southeast Asian Nations region. RHB Bank selected MX.3 to support the demand for more hedging and

investment products for its growing client base and to navigate the changing regulatory landscape.

Following the go live on MX.3, RHB Bank can now trade structures, introduce new products to the market faster and eliminate time-consuming manual processes.

By moving from multiple systems to a single platform, the bank has also been able to introduce standardisation of its processes across entities, reduce infrastructure and operational costs.

Guy Otayek, head of Murex Asia Pacific, commented: "As the Asian markets continue to evolve, we are very happy to be partnering with the RHB Banking Group, giving them the software and support they need to meet future regulatory demands and harness the latest technology."

"This go-live is a great example of how IT transformation can open new paths for business growth and we look forward to working with RHB Bank and other banks in the region on future projects."

Mohd Rashid Bin Mohamad, group treasurer, group treasury and global markets at RHB Banking Group, said: "When we embarked on this project, we were looking for a scalable solution to drive business growth, improve pricing and risk management capabilities and reduce cost with operational efficiency."

He added: "With Murex's MX.3, we can achieve these three goals with one platform. We also realised at the onset the importance of having a good core working team and thereby picked the relevant experienced representatives across the various functional areas to champion the implementation."

### RegTek.Solutions launches SFTR solution

RegTek.Solutions has extended its platform to include a full reporting solution for the Securities Financing Transactions Regulation (SFTR).

The solution helps operations and technology throughout their compliance journey from analysis and testing to production and oversight.

According to RegTek, the solution provides clients with the ability to visualise and analyse their data within a rich user interface before regulatory scrutiny.

It also handles SFTR action type determination and ISO20022 generation for all reports, simplifying the complexities of reporting under SFTR.

The new SFTR solution is backed by a strategic service level agreement to keep rules and market integrations up to date with the expectations and best practices of regulators, trade repositories, and the securities financing market in general.

Reg.Tek also explained that in addition to 'out-of-the-box' regulatory, repository and enhanced reporting quality checks, clients are also able to write custom rules.

Brian Lynch, CEO and co-founder of RegTek.Solutions, said: "The market has responded with new approaches and solutions to deal with the complexity of SFTR."

"The flexibility of our modular platform has allowed us to create a unique set of tools that fill gaps that firms can't fill on their own. By supporting the testing and readiness projects, while also offering a full reporting platform, we're giving firms a simple and cost-effective alternative to large utility solutions or internal build options."

He added: "We're also actively working on extending our unique completeness and accuracy reconciliations platform to provide controls so critical to the long-term success and sustainability of any reporting regime."

### **Broadridge launches securities lending assessment solution**

Broadridge has launched a firm-specific fund-by-fund comparative securities lending assessment solution for mutual fund companies and the boards that oversee their funds.

The solution, Broadridge Securities Lending Board Insights, is currently being used by a number of clients.

The client-specific report lets companies monitor the relative cost, fee 'splits', and income obtained from

their securities lending arrangements. In addition, it will help all interested parties receive appropriate rewards for the risks they undergo in their lending programmes, according to Broadridge.

Broadridge noted that it helps to reduce risk related to mal-distributed securities lending income.

Eric Bernstein, head of asset management solutions at Broadridge, commented: "Faced with mounting pressure on fees and the need for a clearer understanding of competitive financials, many funds are looking to securities lending programmes to maximise yield on their long-term holdings."

He added: "Based on Broadridge's unique data set, coupled with rich subject-matter expertise, the reports help boards and fund companies get ahead of today's challenges to capitalise on what's next, uncovering opportunities to improve their returns."

### **CSOP Asset Management selects Citi's agency securities lending product**

Hong Kong's CSOP Asset Management has chosen Citi's agency securities lending product to drive higher returns on idle asset holdings.

The partnership highlights the growing interest in the asset management industry to include securities lending as an additional income driver. Asia continues to provide high returns for securities lending participants, and the segment has grown in the last five years as the asset management industry has expanded.

Chen Ding, CEO of CSOP Asset Management, said: "Securities lending is a natural evolution for CSOP Asset Management as we look to enhance the returns on the assets held within our fund structures for investors. The partnership with Citi Agency Lending is a key step in assisting us with that goal."

David Russell, head of prime, futures and securities services for Asia and Hong Kong head of Markets at Citi, added: "This partnership is a testimony to the growth of securities lending in the investment management space." **SLT**





# Technology today: ditching the discourse to embracing disruption

As the financial environment grows, Salvador Giglio of GLMX says when it comes to technology it becomes necessary for those standing on the sidelines to begin to play an active role

Lately, when discussing the future of technology, many imagine a world of autonomous cars, renewable energy, and artificial intelligence. In the extreme, this picture is often represented as a dystopian world where humans answer to robots.

Perhaps this view was fostered by the well-known 2013 Oxford University paper: "The Future of Employment: How Susceptible are Jobs to Computerization," where

the authors surmised that up to 47 percent of US jobs could be automated in the next 10 to 20 years.

In this context, automation is extremely threatening; it forces drastic behavioural changes in our generation through the adoption of technology. Headlines highlight the futuristic concept of self-driving vehicles and add to the stigma of technology as a 'disruption' to life as we know it.

Technology is not the sole disruptor we face, though. We live in a world where the rules that govern our personal and work lives are often changing. The securities finance industry is subject to the impact of new regulations and the whims of politicians, circumstances that we cannot change on a macro level. We also live in a world that, each day, begs for quicker, more efficient processes that we can change with the technology developed and constantly improved. In the realm of technology, what once was considered 'disruption' may now be seen as 'innovation'.

Additionally, big market players are shifting perspectives, embracing the partnership between fintechs and more traditional organisations, and exploring the opportunities these partnerships can bring. Financial institutions are partnering with tech startups to provide streamlined solutions rather than disintermediate workflow. Large financial companies have created environments to support the development of new ideas and ultimately create meaningful change within the industry. For instance, J.P. Morgan launched a fintech accelerator a few years ago to allow startups to leverage their institutional network, resources, expertise and data.

At the time of launch, Daniel Pinto, co-president and COO of JPMorgan Chase, said: "We are committed to driving industry change by investing heavily in internal development, but also by collaborating with the talent of determined, young startups."

Globally, regulation is changing, and as a result market volatility is ever-present. Stricter reporting requirements through the Securities Financing Transactions Regulation (SFTR) beg for the boost technology provides.

Automatic data-capture eliminates an imminent, additional, and manual dimension of current workflow. Why should the processes that preceded the current data-driven environment decades ago be the ones that linger today? How can legacy institutions partner with financial technology providers to adapt to the current conditions? How can we reinvent the popular discourse to include market leaders in the push forward rather than disrupt the empires these institutions have built? Each day the environment evolves, and we can adapt to be better professionals by allowing technology to

do the heavy manual lifting to maintain integrity and fairness in the market. Our perspectives must evolve to consider what we once saw as a threat becoming a key asset to the way institutions, large and small, interact with broad client bases.

## Keeping pace with regulation

As electronic trading greatly simplifies the broker-dealer workflow, banks are becoming big supporters of the technology. In today's environment, inefficient processes only add to the chaos of ever-evolving market conditions. In Europe, data reporting has become increasingly important to maintaining compliance with the second Markets in Financial Instruments Directive (MiFID II). Regulation is not static, though. It constantly builds and expands at dizzying rates. SFTR goes live in Europe in Q2 2020, and firms will be required to report all securities finance transactions to trade repositories. This regulation requires reporting of over 150 data fields across repo, securities financing, buy-sell backs, and margin lending transactions. Repo markets are larger than ever before, and regulation creates an additional dimension to the daily workflow. Still, firms have resisted the change. As the start of SFTR creeps closer, firms scramble to determine the best practices to store and report massive amounts of data. Technology implementation makes this easier than ever before by capturing accurate transactional data for more granular archives on-platform in real time. Reporting requirements may be the push firms have long needed to see the benefits automation provides to sustain an orderly market. Europe paves the way with SFTR, but undoubtedly stricter regulatory conduct will become a global standard. With the growth of regulation, preparation will either make or break institutions.

Integrated front-end trading platforms have been used by sell-side repo trading desks for over two decades. Interdealer broker electronic marketplaces with basic post trade straight-through-processing have been around for fifteen years. However, the innovation around the dealer-to-client market remains woefully underdeveloped. As settlement risk due to manual errors is still prevalent, firms must be vigilant to guard against losses as a result of mismatched trades. In fact, the International Capital Markets Association (ICMA) created a trade matching and affirmation template with over 40 fields that must be confirmed

# Disruptive Technology

by each counterparty shortly after a trade is executed. Trade matching is key to identify incorrectly booked trades. The amount of time needed to affirm each trade is significant, though. Simply implementing execution technology with straight-through-processing can eliminate the need to confirm these details.

As volumes increase and more stringent regulation begins to shape market behaviour (especially in, but not limited to, Europe), widespread technology adoption is needed to keep pace with the growth. Steady growth benefits all sides, but lack of preparation can lead to turbulence down the road. The European Repo and Collateral Council (ERCC) reported an increase in repo volumes of 6.3 percent year-on-year since the ERCC's last survey in December 2017. Additionally, they reported an increasing market share of electronic trading in this space. Now, more than ever, we see an opportunity to integrate technology. Firms can ensure they are best prepared for consistent changes and volume increases by implementing processes that grow with the workflow imminent for firms.

As we move towards a new regulatory landscape, technology can play a key role in capturing trade details and ultimately avoiding an added step in the already-chaotic workflow. This record-keeping process provides benefit to both sides—the regulators and the member firms. Behavioural documentation provides insight into understanding deeper market trends, helps to inform future trade decisions, and offers quantitative data to back industry discussions. The popular running discourse dictates technology's imminent control over mankind, but it is prudent to challenge this discourse and consider how mankind can control technology. If long division was still a painstaking paper-and-pencil process, our ability to do more complicated equations would be limited. Technology is a tool, and learning to utilise that tool can be monumental for the growing volumes financial institutions process each day. Beyond the processing capabilities, operational efficiency clears time for market professionals to focus on, rather than distract from, true market discussions.

## This year and beyond

How do we navigate an evolving marketplace today? There will be those who lead the charge and those who

follow closely behind. Some institutions have established technology-produced revenue goals, tasked employees with implementing electronic trading practices, and explored the vast array of technology offerings available. Technology has become such an integral part of our lives day-to-day. It seems counterproductive, then, to limit the leverage that technology can offer to transform manual processes into automated ones. As the financial environment grows, it becomes necessary for those standing on the sidelines to begin to play an active role.

Changing behaviour presents obstacles. At the start of the fintech revolution we are currently immersed in, large institutions feared technology as a 'disruption' of the industry they came to know so well. The discourse that molds technology as a disruptor demeans the true essence of what automation has brought to both buy-side and sell-side institutions. Disruption is the norm today, and with so much of it, it is important to focus on the value added from these changes. The ability to quickly adapt and respond to the changing environment around us is quintessentially human. As Elon Musk realised, after a failed attempt to over-automate the manufacturing process at one of his Tesla factories, technology should be used as a tool allowing employees to focus on value-added activities instead of mundane processes. Technology alone need not be the answer. When man and technology partner, however, our business potential exponentially increases. Facing new hurdles each day, we are asked to challenge the popular discourse. There is no passive approach to technology; we, as individuals, and an industry, can embrace it or fall behind.



Salvador Giglio  
COO  
GLMX



# We clear the path

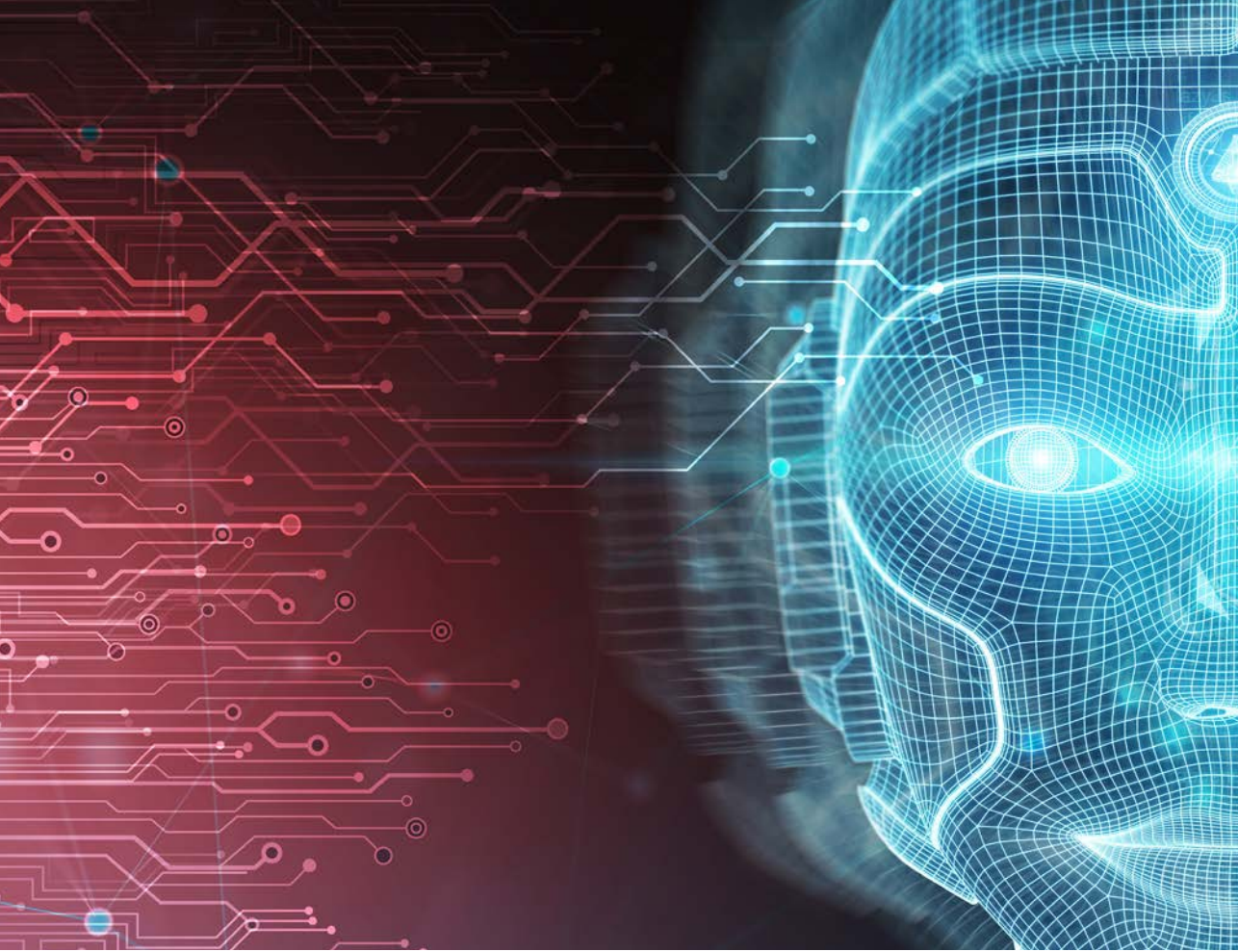
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# Employing technology to its full potential

Given the forthcoming demands that our market faces, David Lewis of FIS says the full potential of current and new technology must be employed if the market is to stay afloat, let alone develop

We live in an increasingly exception-based society where repetitive processes are undertaken more and more by machines or automated processes. These can range from the mundane tasks, such as washing clothes in the washing machine, to truly transformational events such as the breaking of the Enigma code in World War II. The inventor of the code-breaking machine, Alan Turing, commonly

referred to as the creator of modern computing, recognised that the task of breaking the nearly 159 quintillions (159 billion billion) possible combinations in each discrete 24-hour window available to them was simply beyond any human capability, instead developing a machine to meet the challenge. In more recent years, with the advent of the smart devices we all carry around or have in our home, we





have seen what was previously truly transformational in terms of processing capability become almost mundane.

Industrial processes, such as vehicle manufacturing, are dominated by automated factories populated by robots. Using humans to build such products no longer makes economic sense, as global competition has increased and margins have been squeezed. Our own financial markets are seeing robot advisors providing banking services and even replacing fund managers as the “fee free” investment fund becomes more common, and costs must be cut in an ever more complex environment. Securities finance is no different. The increasingly complex regulatory environment drives change in our own processes and structures, but it is also pushing demand for securities finance and collateral management services ever higher.

The GFF Summit in Luxembourg at the end of January produced a great deal of interesting analysis and

commentary, including reporting a belief among 83 percent of attendees that the demand for high-quality liquid assets (HQLA) would either “increase” or “increase significantly” over the next two years. With only 48 percent of the same audience indicating they believed the supply of HQLA would “increase” or “increase significantly” over the next two years, the effect on the market will not be hard to predict. In simple supply and demand logic, this will bring even greater pressure to bear on the market mechanisms charged with mobilising collateral to meet the increasing demand.

To put this into some kind of perspective, consider the expanding influence of initial margin requirements for non-cleared derivatives. Following the Pittsburgh Summit of 2009 when the G20 heads of state met, the Financial Stability Board (FSB) was charged with finding ways to “improve both the quantity and quality of bank collateral and to discourage leverage...” as well as mandating all standardised over-the-counter (OTC)

derivatives to be centrally cleared, and those outside the central counterparty system be “subject to higher capital requirements.” All laudable aims, but the task before the market and its regulators would be enormous. In 2011, for example, the OTC market had a notional outstanding value of \$708 trillion, or 10 times the GDP of the world at that time. The Mark to Market value at the same time was equal to around half the GDP of the world.

As the regulation rolls out, the market will have to source new collateral to provide both initial and variation margin. The phased-in approach of the regulation commenced in September 2016 and ends in 2020, with new market participants falling within its jurisdiction as the compliance level, based on notional trades outstanding, is lowered incrementally. September 2018 saw the entry levels set at over \$1.5 trillion average notional outstanding, capturing just seven of the world’s largest banks; September 2019 will see the entry-level lowered to \$0.75 trillion, bringing a further 35 organisations into the fold. However, the final increment will be the most transformational. In September 2020, all firms trading uncleared OTC derivatives with an average notional outstanding of over just \$8 million will have to comply with the bilateral collateral delivery requirements. This is estimated at bringing 985 further entities into the scope of the new requirements.

Given that International Swaps and Derivatives Association (ISDA) estimated the value of collateral requirement to be around \$1.4 trillion as at September 2017, roughly equivalent to the GDP of South Korea, the effect of this rollout across so many market participants, in terms of the collateral requirements they need to satisfy, should not be underestimated. At FIS, we are seeing increased activity from our clients looking to combine their securities financing and collateral management operations, with the objective of making the best use of all the collateral they may already have.

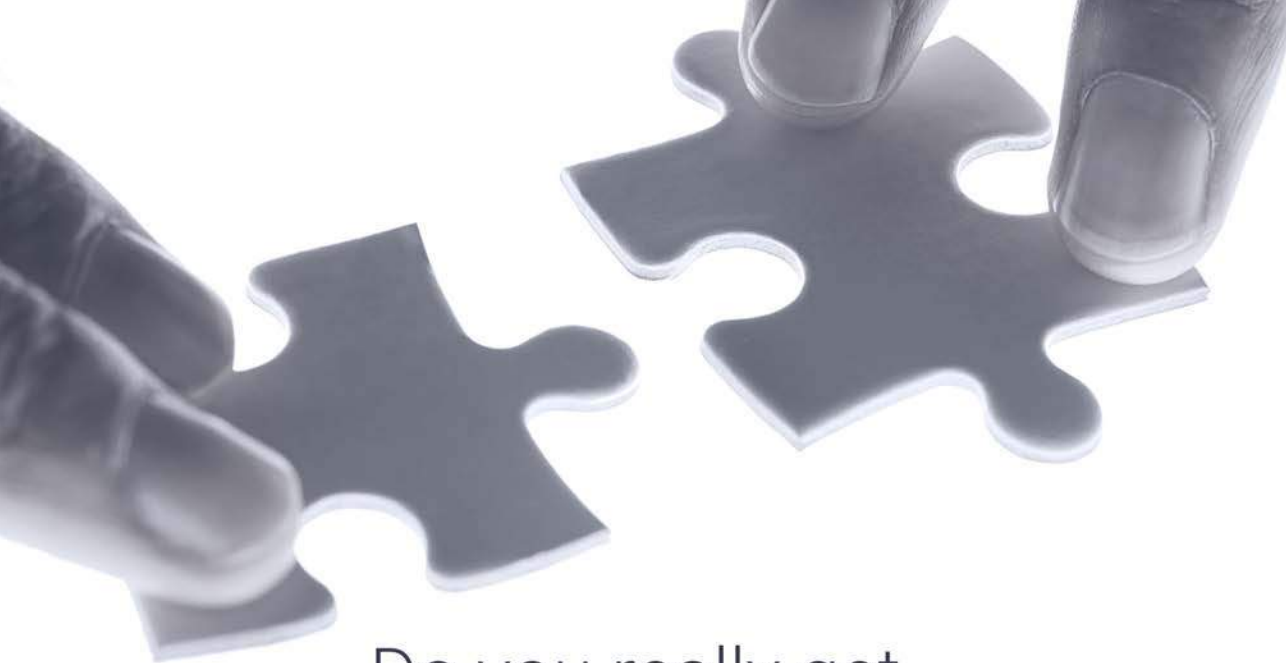
While looking internally rather than to the street for ways to supplement the increasing thirst for collateral may lessen the strain on the financing market, it does threaten to disrupt the existing transaction chain. Increasingly, large asset managers are looking to manage their own collateral needs as far as they are able, developing repo and securities lending capabilities

to manage the forces of supply and demand across their own organisation, before addressing the wider market. In order to manage this, increasingly complex collateral management systems are being developed, coupled with enhanced position management systems to give an overall, multi-discipline, multi-market view across the company. Standardisation of contracts, such as the ISDA Credit Support Annex (CSA to the ISDA Master Agreement), will help smooth the process of calculating bi-lateral initial margin between counterparties, but the enormity of the task and the demands it will place on the financing industry cannot be underestimated.

The opportunity it brings cannot be underestimated either; such an increased level of demand for collateral will likely bring a significant rise in activity across the transaction chain. However, to achieve that effectively and efficiently, the industry will need ever more advanced systems and capabilities, the likes of which Alan Turing could only have dreamt. Returning to the January GFF conference, another relevant discussion demanded attention and should ring alarm bells in some quarters. A panel on emerging technologies observed that technology employed “remains well below its full potential”. Given the forthcoming demands that our market faces, the full potential of current and new technologies, such as DLT and smart contracts, must be employed if the market is to stay afloat, let alone develop. The latest FIS Readiness Report indicates 80 percent of industry leaders in banks and brokers are embracing such digital innovations and seeing results. Are you?



**David Lewis**  
Senior director  
FIS



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# Combined forces

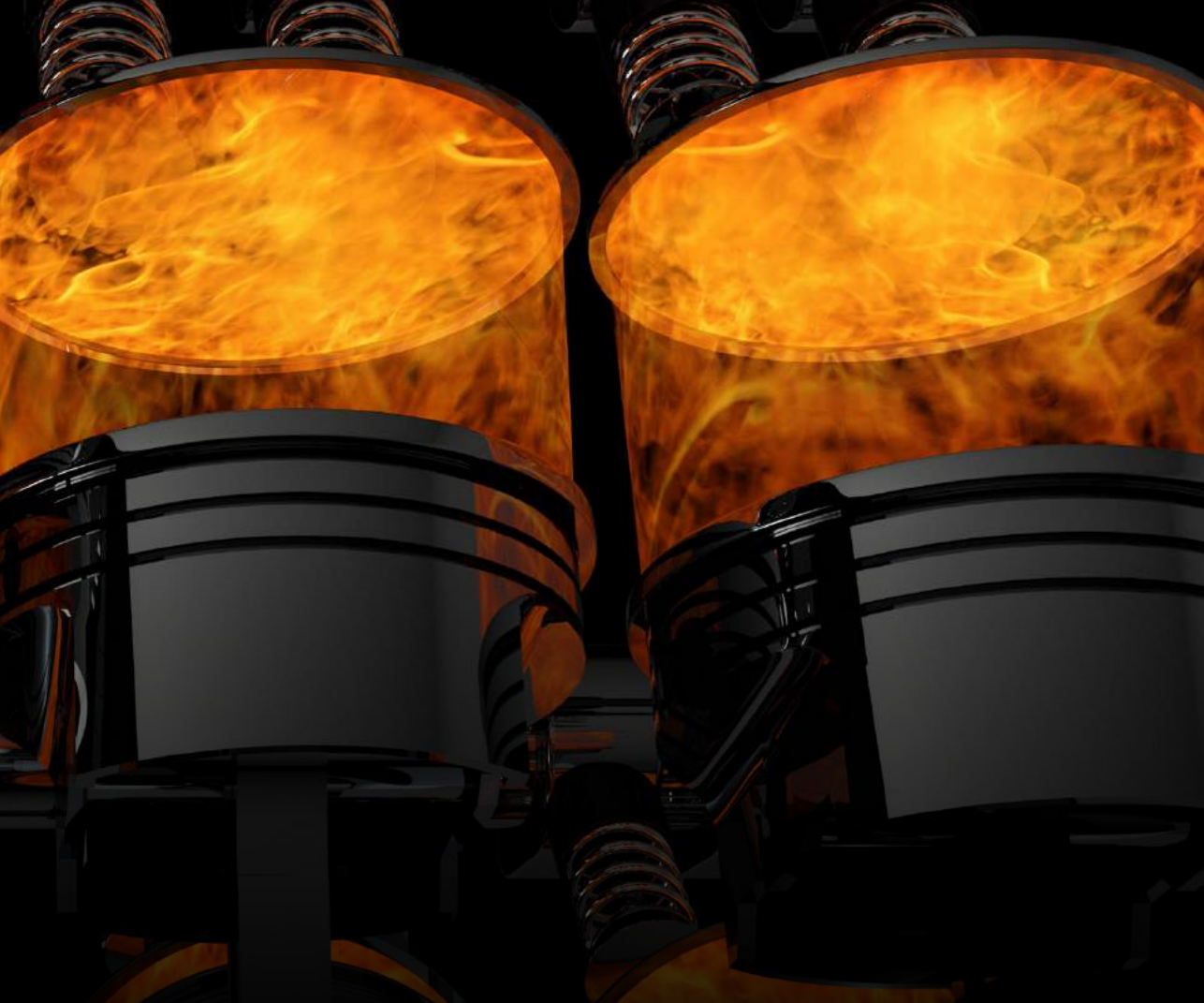
Armeet Sandhu and Dan Dougherty discuss how the new partnership between EquiLend and Stonewain will benefit clients

**Maddie Saghir reports**

**Could you tell me a bit about the partnership between EquiLend and Stonewain?**

**Dan Dougherty:** The partnership between EquiLend and Stonewain combines the forces of two leading technology firms in the securities finance space to offer a powerful new engine to market participants

from which to drive their businesses. The EquiLend Spire platform incorporates EquiLend's suite of services—NGT, post-trade suite, DataLend market data and performance measurement and EquiLend clearing services central counterparty (CCP) connectivity—and offers seamless integration with the modular and scalable Spire platform. As a result, firms can benefit from full straight-through processing covering their entire business, including trading, accounting,



security, risk analysis and compliance, reporting and operations. The partnership allows us to collaborate for the benefit of the industry, with best-in-class technology offered by both firms now together in one streamlined platform. Clients can also benefit by creating efficiencies across their business operations and lower the total cost of participating in the securities finance marketplace.

**What opportunities will the EquiLend Spire solution provide?**

**Dougherty:** The launch of the joint EquiLend Spire solution allows clients to bring their entire operation into one single, fully integrated platform. Many firms currently juggle countless different technology solutions to manage all their business functions; rather than managing those platforms and relationships in a piecemeal fashion, the EquiLend

Spire solution is one seamless platform covering everything a firm needs to run a securities finance business. Furthermore, the open architecture allows firms to build their own customisation right on top, such as artificial intelligence or machine learning functions. As enhancements are made to EquiLend Spire over time as industry needs evolve, no new build is required by clients, lowering IT costs for firms. This also allows new features to be added, including new EquiLend services such as EquiLend Exposure or Securities Financing Transaction Regulation functionality, without the need for extra build from clients. Built on a modern tech stack, EquiLend Spire offers full straight-through processing with the full lifecycle of a securities finance trade covered from trade initiation through the entire post-trade process. In short, a client could plug into EquiLend Spire and be ready to run their securities finance business from day one.



# Technology Partnership

## What are the benefits of being able to manage a book of business on a single and integrated platform?

**Armeet Sandhu:** Today we see a consolidation of activities that were siloed in the past. As the industry changes and business units are consolidated into a combined business offering—such as bringing together securities lending, repo and collateral functions—disparate technology systems across those business lines will cost time, effort and technology investment. Instead, if you leverage a comprehensive platform such as EquiLend Spire you can do it all in one place, enabling those forward-thinking firms who have aligned these business units all to “speak the same language” using one technology. This is what we offer out of the box. Another benefit to this is that a view of global exposure and risk management assessment becomes much simpler.

## Are there any risks of having the entire business in one central place?

**Sandhu:** The risk of disparate systems having data leaks, data synchronisation problems and stale data far outweighs any perceived risks with a centralised solution. A major reconciliation problem exists when issues arise as different systems communicate. When you have one system and need to evolve your business, you have just one system to update—whereas if you have multiple systems it becomes a much riskier and more involved project. Not to mention the fact that the cost of buying and maintaining one single system is much less.

## What were the main challenges in creating this solution?

**Sandhu:** Our primary objective was making sure that we were creating a solution that would provide value and benefit to our end customers. The biggest concern that we discussed when we created this solution was to ensure we were creating a solution that had a need in the industry. We also spent a great deal of time ensuring that the different features we were building into the solution were symbiotic and not overlapping.

## How important is it for firms to embrace new technology? Are there still a lot of people in the industry using legacy systems?

**Dougherty:** A few solutions exist in the marketplace for firms to manage a variety of business functions. None is as robust as the EquiLend Spire platform, which has the added unique benefit of incorporating the full suite of EquiLend services. This allows firms access to the entire ecosystem of the securities finance market. Technology is key to running any business today, and we understand that many firms have pain points when it comes to technology.

We believe that when technology hinders rather than supports your business it can spell disaster. That’s why we built EquiLend Spire: to fill a gap in the market for well supported, trusted technology that offers economies of scale, comprehensive features, information security and forward-thinking technology.

**Armeet Sandhu**  
CEO  
Stonewain



**Dan Dougherty**  
Global head of sales and CRM  
EquiLend



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# Hidden analytic gem

Robert Levy of Hanweck provides insight into cross-asset class analytics for strategies in trading and lending

Hanweck Trading Indicators include Borrow Intensity Indicators (BII), launched in March last year, and the most recent offering, Issuer Volatility Risk (IVR). BII generates synthetic lending rates on a real-time basis for the optionable universe of listed equities (OPRA coverage), describing term rates with maturities from roughly one month to one year. BII originates in real-time implied borrow data that is part of the core Hanweck Options Analytics.

An additional area of research and development for Hanweck has been debt-equity models entirely based on market data (for example, no dependency upon reported financial statements). By not requiring less frequently reported corporate information, the model can react with the speed of financial markets. IVR has evolved from deployed analytics that Hanweck has provided on a customised basis since 2007, and intraday updating dataset. Both these trading indicators extract information from entire option chains in order to deliver signal compressed into more compact indicators. In the case of IVR, we condense information across strikes and time to generate either an implied probability of default based or an implied (synthetic) credit spread by assuming a fixed recovery rate.

The motivations in using debt-equity type models for cross-asset class hedging and arbitrage are straightforward. For example, a high-yield bond trader may wish to hedge credit risk with equities or equity derivatives. But why would anyone care in securities lending? We would argue that by relating information in the more liquid and transparent exchange traded markets to less transparent markets, it provides another channel of information to equities collateral management areas to more rapidly anticipate greater intrinsic value in securities such as fixed income exchange-traded funds (ETFs).

### Overview

In this article we will apply both IVR and BII measures to the iShares iBoxx High Yield Corporate Bond ETF (HYG), looking at equity collateral value through Borrow Intensity, and relative value to credit through IVR. Both speak to liquidity and flows that impact execution, trading, and investment in this ETF, of direct concern to market participants with shorter-term focus. Also, longer-term investors can find these metrics valuable, for example, when evidence arises that short term market dynamics may be causing the



ETF to overshoot on either rich or cheap directions, departing from fundamentals and creating a better entry opportunity. Cross-asset class ETFs present a special challenge to collateral traders in terms of predicting liquidity and borrowing costs, since the constituents are not equities. But if a securities lending desk notices, for example, the HYG ETF overshooting cheaper than the IVR levels, this is another indicator of trading momentum that will create shorting and increasing need for locates.

### Issuer volatility risk, analytic approach

Trading indicator impact

Equity participants:

- Short term: informs estimates of market impact and liquidity
- Long term: rich/cheap view across the capital structure (Credit ETF) versus its equities counterpart

Collateral trading:

- Momentum and trends in valuation and implied term rates inform overnight rates

IVR derived implied probability of default in real-time from the equity derivatives market. It is in some respects similar to a 'single-name' VIX in the manner it reacts to a wide range of strikes and skews, but the measure is particularly sensitive to the downside or tail risk. IVR is generated for a single name: the single equity underlying an option chain. Aggregate measures can then be constructed as shown below for HYG, either based on the weights of an ETF or index, or any arbitrary basket.

IVR:

- Synthetic credit spreads from equity options
- Based upon a constant elasticity of variance (CEV) model
- Transformed with predictive analytic processes to separate signal from noise

### Synthetic credit replication with equity options

Figure 1 shows in the upper panel a synthetic replication of HYG entirely from equity and equity

options data (no corporate bond information). In this example, the synthetic is generated in terms of credit spread (IVR\_spread) shown in a reversed Y-axis so that price and yield spread can move in the same direction.

The lower panel shows the historical closing prices of the HYG ETF, which comprises over 950 high-yield bonds of nearly 300 unique issuers.

Process of credit replication with IVR:

- Map corporate bond to related equity
- For equities with listed options, calculate IVR on the option chain
- Construct a weighted aggregate of IVRs on mapped entities

### Synthetic showed distress prior to the actual ETF in Q4 2018

The IVR of HYG series has very high correspondence with the actual ETF, and in Q4 2018 it appeared that the equity derivative market moved first both in the process of rapid spread widening (lower HYG prices), and then recovery with spread narrowing (higher HYG prices). IVR moved ahead of HYG, with the major move down (spread widening) on 29 October last year to 437bp (circled in blue), and the second leg down on 24 December last year to 530bp. HYG didn't see the first corresponding move lower until reaching 82.71 on 23 November last year (lagging by weeks), and then the second move down to the December low of 79.63 on 24 December last year (entire area of changes circled in red). Both series recovered rapidly after Christmas of 2018, with the synthetic series moving up very sharply to reduced risk level.

The fact that the equity derivative series moved more quickly can partly be explained simply by the fact that it has more transparent and liquid underpinnings—the exchange-traded listed equity options market.

On the other hand, the markets for the bonds within HYG are opaque, trade less frequently, and tend to be model priced between trades based upon characteristics such as sector, rating, and duration.



Those trying to seek bids for the bonds may notice that markets have widened considerably, but otherwise, information filters back out to the market relatively slowly compared to exchange-traded products.

This will only get worse if recent proposals such as a 48-hour delay on block bond trades are brought into effect. These are all motivations to see an alternative market view of HYG and other credit-based ETFs.

## BII on HYG

Figure 2 shows the 45-day and 180-day BII on HYG, where borrow intensity is expressed in the format of a rebate rate. In this time period, the 45-day term rate reached a negative (hard-to-borrow) level of -1.5 percent with the 180-day term at the same time of roughly 0 percent. This was wider and more rapidly changing spread (45 day to 180 day) than usual for HYG (see chart area circled in blue), which tends to be a leading indicator for market distortions arising from some combination of tightness in the collateral market and a higher level of put buying.

The pattern around the turn of the year was somewhat erratic, but the BII synthetic rates appear to show evidence of shorting by 15 November 2018, which dissipates by roughly a month later on 18 December. Combined with the IVR information also showing distress from the equity options market, there was evidence of signals anticipating near-term distress in HYG.

In fact, HYG declined approximately 2.6 percent over the next month (from 15 November to 18 December), and 4.7 percent in total by 24 December last year before reversing after the holiday. Notably by this time the BII picture had turned completely upside down with 45-day rates above 180-day rates.

The ETF didn't command a greater borrow premium again until mid-January as HYG bounced strongly higher almost completely retracing December losses by 11 January 2019, when the 45-day rate went back below the 180-day, but both stayed more synchronised in this next episode of maintaining a lending premium.

## Value of linking information across markets

We focused here on using Hanweck IVR and BII to increase the understanding of the flows and valuation of the high yield bond ETF HYG. Fixed Income ETFs are increasingly important as liquidity expands to meet institutional investment needs.

The bond market does not have as efficient a market structure as equities in either transparency or execution, and these ETFs serve a valuable function. At the same time, there is a tension in creating liquid ETFs in the equity market that holds comparatively illiquid bonds.

This creates both challenge and opportunity for equity investors, market makers who participate in the creation/redemption process, and for securities lending areas trying to maximise value in managing ETF collateral.

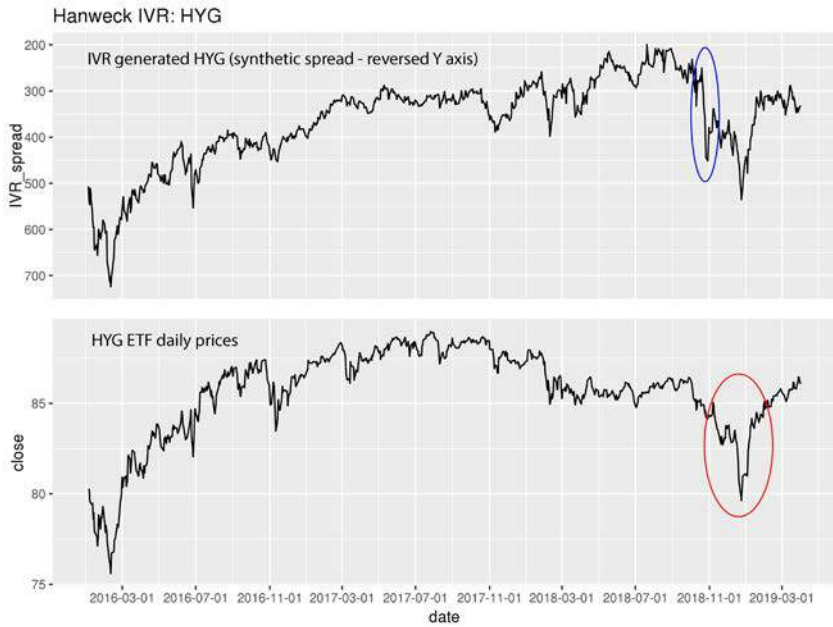
It's valuable to connect information across the derivatives and cash markets, and even across asset classes.

The analytics considered here can transform information hidden in the equity options markets—where there can be market leading information—into data that informs both equity strategies and securities lending.

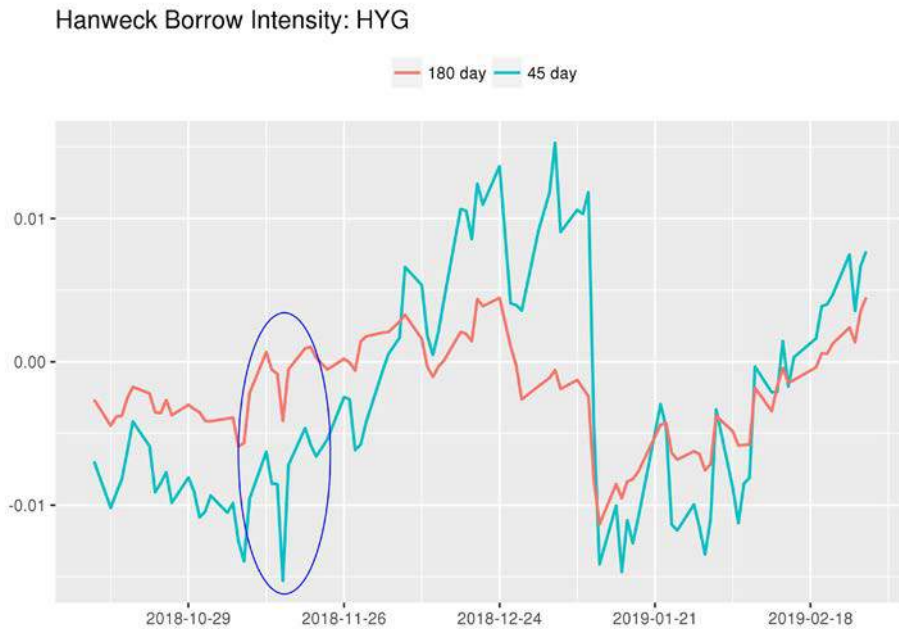
Robert Levy  
Head of  
business development  
Hanweck



**Figure 1: Synthetic (entirely from equity options) vs Actual traded prices of HYG ETF**



**Figure 2: Borrow Intensity HYG October 2018 to March 2019**



# SFTR solution No gimmicks



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# The digital future

Walter Kraushaar of Comyno provides an outlook on the digital future of securities finance using distributed ledger technology

The securities finance market historically has been competing over products and personal relationships. For decades IT was rather seen as a supporting tool than a business driver or innovator.

In today's digital age, competition is rapidly increasing through the creation of platforms and networks which offer straight-through processing, connectivity and distributed ledger technologies (DLTs).

Nowadays, the ultimate advantage over the competition is achieved by building a better platform and offering full connectivity to other trading platforms and systems, rather than continuing the use of existing outdated product suites.

In light of the need for transparency driven by the new regulatory reporting requirements such as the Securities Financing Transactions Regulation (SFTR)—among others—many market participants, regardless of being big or small, are burdened by the need to break off silos and fulfil all regulatory requirements. However, new reporting requirements should not only be seen as additional operational efforts. They, in fact, increase transparency not only towards the regulators but also towards senior management within their own organisation. This new transparency should be used to better manage inventory, client relationships and risk.

After the financial crisis banks, brokers and asset managers have spent a lot of time, efforts and money reorganising their businesses, to introduce new business models, modernise their IT infrastructure and use new technologies to bring the best solutions and products to the market.

However, these strategic investments have often led to a jumble of old systems, knowledge, processes, and corporate cultures.

At the same time, new digital companies are entering the market without legacy issues and with a new digital approach to today's markets and regulatory challenges. As a result of the old system infrastructure, digital platforms and DLTs have been introduced to the market to handle the increased volumes of data more efficiently, quicker and cheaper with a variety of connectivity options to communicate with other IT systems.

In general, a digital platform creates a combined development and delivery environment that provides users with consistent, accurate and timely data. A data management platform imports data from many systems and enables customers to view the data in a consistent manner. On top, DLT provides the technological infrastructure and protocols that allow simultaneous access, validation and record updating in an immutable manner across a network spread across multiple entities or locations—blockchain is a special form of the DLT.

Comyno has taken this forward-thinking approach even a step further to create a digital securities finance trading platform, called C-ONE. This platform combines trading, data management technologies and data analytic tools into a single software suite with an intuitive and easy-to-navigate customised dashboard/cockpit incorporating DLT and providing almost unlimited connectivity to other systems, platforms and data services.

With its plug and play technology, Comyno provides variations of such trading and analytic tools as:

- C-One Trading
- C-One Collateral
- C-One Risk Management
- C-One Reporting
- C-One Allocation tools (for example, fairness algorithms for the automated allocation of fund inventory to trade requests)

The tools can be designed for the clients solely based on their respective requirements because the aforementioned technologies allow a fully automated and customised product.

A key role of the new technology used for the C-ONE platform is to collect structured and unstructured data from a range of internal and external sources and to then integrate and store that data in a private or public cloud. The digital platform also analyses and organises data to provide insight and tailor-made reporting to data-driven parts of the business, such as securities finance trade, risk or counterparty analysis.



***The digital approach is already a trend in many other industries, where one can see more and more companies shifting from products to platforms***



The data incorporated into the platform can be first-party data, coming from an organisation's own applications, systems, websites and products, as well as second-party data from the outside world which is needed to add all necessary information to the record. In addition, platforms use third-party data to fill in gaps in a company's own data environment.

Subsequently, Comyno's approach has always been to provide a proficient tailor-made securities finance

platform that combines the client's specific business and reporting requirements with the necessary connectivity of the platform.

C-ONE connects almost any existing clearing house, tri-party agent, central counterparty (CCP) and other IT system solutions for in-house trading systems in the securities finance world.

By building a digital platform, one party can easily connect its business with another party by using fully automated straight-through processing to connect products and services, co-create value, minimise errors arising from manual tasks (such as dual entries) and save costs overall.

This ability to 'plug-and-play' is the defining characteristic of 'digital platform thinking' by Comyno and has resulted in the development of our C-ONE platform.

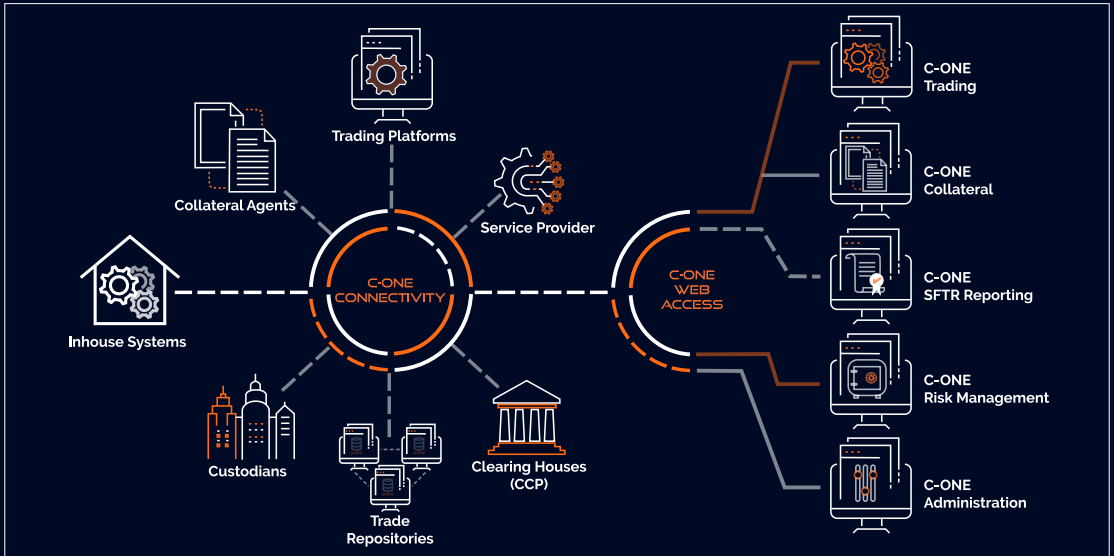
The digital approach is already a trend in many other industries, where one can see more and more companies shifting from products to platforms. In the securities finance industry, Comyno has already taken the next step to support that trend for the buy- as well as the sell side.

Most of the competing 'traditional' securities finance systems currently available on the market, offer a rather standardised securities finance product suite which comes at a high cost, licensing fees as well as complex interfaces and still cannot satisfy the heterogeneous needs of the market participants.

Unlike these systems, the Comyno C-ONE platform will offer customised adaptors and functionality available as specific tools as well as single products, which can stand alone or be combined in any possible way.

The clients will always decide based on their own business requirements and budget, which combination of tools, products, connectivity adaptors and other services they will need to build their own personalised C-ONE platform.

In addition, Comyno offers independent strategic advice to find the right business and IT strategy and helps to manage the implementation of the respective tools and/or the digital platform itself. The client has



the freedom to either integrate C-ONE and/or the required tools into its existing infrastructure or to implement a completely new tailor-made solution from the ground up. If needed, Comyno can also develop additional customised tools for any client's specific requirements if they are currently not available on our existing platform.

We combine strategic consulting with state of the art technology to really focus on each and every client individually, which would not be possible without the use of the latest IT technology.

By using this technology, data is available from all of the above-mentioned areas on the digital C-ONE platform.

This enables the clients to reshuffle the existing data in any possible way and not only extract several reports but also develop their own user interfaces.

It also allows white labelling—meaning a bank could invite, for example, their buy-side clients to also log in to the platform to manage their trading and collateral management needs.

Furthermore, C-ONE provides a tailor-made hosted solution with the front end, middle- and back office functionality at a reasonable cost for our clients. The

adaptor-based new platform technology, C-ONE, does not need the programming and maintenance that is necessary for thousands of other interfaces and existing in-house systems.

Finally, the optional cloud-based environment enables the clients to avoid investing in additional hardware infrastructure and allows secure external data storage and processing.

This is what we at Comyno understand as the digital future of the securities finance industry.

**Walter Kraushaar**  
Head of advisory services  
Comyno





# Regulators can bear gifts

Martin Walker, head of product management for securities finance and collateral management Broadridge, discusses the benefits of embracing the opportunities created by using LEIs and UTIs



The key challenge for regulators, central banks and governments attempting to manage systematic risk in the financial system, is simply knowing what is going on. During the financial crisis, transparency was lacking in most areas of derivatives. It was also lacking in securities finance where repo transactions by money market funds were identified as a major source of instability, little understood by regulators.

The one area where regulators had a good view of what was going on was the credit derivatives market, where the vast majority of trades were already being reported to DTCC's Trade Information Warehouse (TIW). Following the 2009 G20 Summit, compulsory reporting of derivative transactions was introduced in the US by Dodd-Frank Act and in Europe by the European Market Infrastructure Regulation (EMIR). However, that desired transparency has been obscured by poor quality data.

In October last year, the Bank for International Settlements (BIS), said: "These exercises have provided evidence of systematic misreporting. This can cause significant quality problems that hamper data aggregation and analysis. In particular, despite the requirement to include a UTI agreed in advance by the two counterparties, for a substantial fraction of the trades the opposite trading position (leg) cannot be found in the reported data. As a result, the two legs of a trade cannot be paired or reconciled...the reasons include counterparties' failure to report or to agree on the common UTI, counterparties' misreporting of their own legal entity identifier (LEI)—or their counterparties' one—and the failure to properly report the closing of transactions."

Compulsory reporting of derivative transactions has been a painful process for everyone involved, not just the regulators and central banks who have put great efforts into cleaning up data, and in the process having to discard a large proportion of it. Major banks are reputed to have spent \$100 million each on implementation of new infrastructure. Not to mention the ongoing costs of supporting that infrastructure, teams dealing with ongoing operational issues and control teams providing monitoring the reporting process. These costs have placed a heavy burden on many capital markets businesses. In Europe, the securities finance market is racing to comply with the Securities Financing

Transactions Regulation (SFTR), which extends EMIR to securities finance. However, it faces some fundamental choices in both the short- and long-term regarding how it deals with the challenge. For derivatives reporting it was common to throw resources at building new systems and processes, on top of already complex operating models. Any changes not related to trade reporting were cancelled or deferred.

Generally, firms were distracted from investing in improvements to overall front-to-back infrastructure. Improvements that ironically are needed to achieve fundamental improvements in the quality of data reported. Unsurprisingly, there was little bandwidth to consider internal benefits to firms from trade reporting. After all the financial crisis revealed that at the firm level, many managers had little transparency about their own overall risks.

Two of the aspects of derivatives trade reporting under EMIR, that have created the most pain for both reporting firms and regulators are unique transaction identifiers (UTIs) and LEIs. Both are simple and rather obvious concepts. A UTI is a unique trade reference shared by both parties to a trade. This allows regulators to avoid double counting trades in the common scenario where both parties are obliged to report. It also allows regulators to check that both parties to a trade are reporting it consistently. LEIs were designed to introduce a standard worldwide code for consistently identifying legal entities involved in financial transactions.

The need to populate UTIs and LEIs have been treated by firms as, at best, an annoyance and at worst as a nightmare. As identified by the BIS, the failure to report UTIs and LEIs correctly has been a major source of trade repository reconciliation breaks and their subsequent costs. These types of problems do not just create costs in the reference data or regulatory reporting teams. When there is a break due to LEI or UTI issues, the query can bounce around the organisation, including the front and middle office until a conclusion is reached about what are really very fundamental questions. Who have we traded with and which trade are we all talking about?

The time pressures to meet derivatives, regulatory reporting deadlines made pragmatic responses

understandable. These include measures such as only enriching reporting data with LEIs at the end of the reporting process (for example, not storing them in core systems). With the deadline for SFTR rapidly approaching, the securities finance industry seems in danger of repeating many of the mistakes around UTIs and LEIs that made EMIR compliance such a painful process (pain that continues to this day).

The reality is that UTIs and LEIs are extremely good ideas. Not only are they essential to support effective regulatory reporting but they could also provide a great value for market participants. The absence of a standard global identifier for counterparties, clients and issuers of securities has been a major obstacle to the adoption of standardised counterparty reference data systems. Many firms have struggled for years to implement centralised counterparty reference data systems.

The failure to consolidate and rationalise means many firms have a multiplicity of systems. Even some of those firms that build very effective systems had to support multiple different codes for identifying clients, specific to different business functions or legal entities. Lacking a market standard, such as those defined by the International Standards Organisation for securities currencies has led to both higher costs and risks. Identification of the correct master agreement to apply to trade, the right settlement instructions and correct risk aggregation are all dependent on getting the counterparty's legal entity identified. Embracing the LEI as a standard way to identify counterparties across both internal systems/departments and the market will ultimately lead to reduced costs and risks.

Even more underappreciated than the LEI is the UTI. In the typical trade processing infrastructure, a trade may feed through multiple processing layers, some external, the others internal. At each stage including trade execution, capture, confirmation and settlement, an additional trade ID may be generated. Similarly, the counterparty will be generating their own set of trade IDs. The lack of a standard trade identifier can cause major costs in both the inter-system reconciliations between internal systems and the external matching and contract compare processes carried out between counterparties.

The inevitable breaks, which can persist for days in some scenarios are a major source of operational risk.

The establishment of a UTI, either through execution on an electronic platform or automated post-trade processes, could ultimately revolutionise many aspects of the processing of securities finance transactions. The risks and costs from breaks between counterparties rise geometrically rather than arithmetically. The older the break, typically the longer and more complicated the process to identify the cause and resolve it. If breaks are in core trade economics, it means the front office are making trading decisions based on an incorrect view of risk and profit and loss. Embracing the UTI concept in both systems and processes creates some fascinating possibilities.

If trades are "paired" rather than "matched" at the very beginning of the trade lifecycle it means any subsequent divergence between trades can be identified quickly if there is an efficient messaging layer in place between firms. This would make it possible to have a continuous real-time matching of trades. If breaks are found and resolved in near real-time it would considerably reduce costs and operational risks.

Paired trades, where there is a near real-time view of the degree of consensus between the parties' views of the trade, also create more potential for mutualised post-trade processing. If both parties are confident they share the same real-time view of trades, it is far more plausible for them to use a common system for common life-cycle activities such as marks, returns and crystallisation.

These are just some of the benefits of embracing the opportunities created by using LEIs and UTIs. The overall lesson from the EMIR is to think ahead. In the short-term take a fresh look at operating models and working out how to integrate reporting with existing post-trade processes to avoid drowning under breaks and additional manual processes. For the longer term think about how changes and innovations such as LEIs and UTIs could drive the overall improvement of infrastructure, processes and data quality.

INTRODUCING

# The Hanweck Borrow Intensity Indicator

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By mining rich data from the options market in an understandable way, the Hanweck Borrow Intensity Indicator provides:

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- › Unique insight into multiple financing rates across time
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Hanweck is a leading provider of real-time risk analytics on global derivatives markets, focusing on the large-scale risk problems of banks, broker/dealers, hedge funds, central counterparties and exchanges.

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**Matt Wolfe**  
Vice president of product development  
OCC



# A collaborative approach

OCC's Matt Wolfe explains why working together is in the best interest for everyone as it is important to ensure stability and market integrity while enabling innovation

## Has technology changed the way the industry approaches regulation?

The industry has always taken compliance with regulations very seriously, regardless of technology. I do think there is an interesting relationship, though. Both regulators and technologists are continually looking to improve upon their individual missions and often influence each other. For example, the growth in algorithmic trading led regulators to implement new requirements to ensure that those algorithms were not harming investors or disrupting markets. In this case, a new regulation was the result of technology changes.

In other cases, regulation drives technology to change. The Markets in Financial Instruments Directive (MiFID) and the Securities Financing Transactions Regulation (SFTR) are good examples, where change was initiated by regulation and then technology had to adapt to achieve compliance. This dynamic has led to safer, more secure, and robust markets. It also highlights the importance of an open dialogue between regulators and market participants, so that regulations and technology advances stay in sync. Otherwise, you may have situations where technology can have harmful impacts upon the users of the markets, or where regulatory changes result in unintended negative outcomes.

A collaborative approach is in the best interest of everyone; you want to ensure stability and market integrity while enabling innovation. For concrete examples, the US Securities and Exchange Commission's strategic hub for innovation and financial technology and LabCFTC are great instances of regulators collaborating with the industry on technology and innovation to better serve the users of these markets.

## What challenges is technology causing for firms? Is there a need for more education?

Even in the face of the constant evolution and advancement of technology, the right investments and resources can enable firms to increase revenue, decrease costs, improve compliance, efficiency and client experience.



***Both regulators and technologists are continually looking to improve upon their individual missions and often influence each other***



I'll give some illustrations of how securities finance firms are using technology to leverage those three benefits, which ultimately allow firms to differentiate themselves from their competition.

**Increase revenues:** Lenders have implemented advanced data analytics to forecast the demand for securities and determine optimal times to lend out

securities and/or re-rate outstanding contracts. This modelling, which is based on historical data and other indicators, has allowed those firms to increase their lending revenues.

**Decrease costs:** Firms have implemented robotic processing automation (RPA) to improve their staff's productivity and reduce their staff costs. For example, the nightly reconciliation of positions and mark-to-market often produces breaks due to misalignment on mark prices. Firms have implemented RPA to automatically double check the price on contracts where there is a break on marks. Having this initial check be automated is more efficient and less error-prone than having a staff member manually looking up prices. It also allows the system to flag the breaks that weren't immediately resolved, which are generally more complex problems. This lets the operations staff spend more time focusing on the more difficult problems and less time on the tedious routine tasks, which is better for the firm's bottom line as well as for the staff's job satisfaction.

approval of a new counterparty and execution of the appropriate documents to be mapped, improved, and then executed via the platform. Evaluating control points and identifying evidence is a critical aspect when implementing these tools, which almost always identifies opportunities for improvement.


Once the workflow automation tools are live, they help to facilitate cross-functional communication and capture that all the requisite approvals were given without the burden of manual tracking and coordination. These tools also help firms execute process more quickly and more accurately, which reduces the time needed to onboard a new counterparty and improves interactions and the experience for clients.

Technology helps to unlock these three benefits of increased revenues, decreased costs, and improve compliance, efficiency and client experience. Firms that effectively deploy such technology can outperform their competitors and differentiate themselves as market leaders.

### How is the OCC leveraging technology?


OCC uses advanced analytics to operate our world-class risk management systems and ensure the safety and security of the markets that we serve. We have a process innovation team that uses workflow and robotic process automation tools to improve and deliver high-quality services in an efficient, compliant, and reliable manner.

We are continually striving to innovate in ways to better serve the industry and the greater public interest. This can be seen clearly in the multi-year 'renaissance initiative' we launched late last year to modernise our technology infrastructure and enhance the way in which we operate as a business. Our goal for this initiative is to enhance our compliance posture, increase OCC's agility, improve our system's resiliency, and deliver greater efficiency to the users of our markets. The technology innovations that we are implementing will transform how we do our jobs, enhance how we interact with and serve the industry, and introduce new capabilities that will enable firms to innovate and grow.



**Technology helps to unlock these three benefits of increased revenues and decreased costs**

**Improved compliance, efficiency, and client experience:** Workflow automation tools have enabled firms to realise gains in all three of these areas. These tools allow processes such as the



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# Clearing the hurdles

Pirum's Matthew Lyons discusses the ongoing demands clients are facing on technology resources and approaches to overcome them

## What are the many technology demands on your clients?

Our clients are facing multiple demands on their precious technology resources today from a variety of drivers. We are all acutely aware of the vast number of regulations impacting our industry from the second Markets in Financial Instruments Directive (MiFID II), Dodd-Frank, the European Market Infrastructure Regulation, capital and liquidity related regulations, the Central Securities Depositories Regulation (CSDR) and the Securities Financing Transactions Regulation (SFTR). As if that wasn't enough, macro-economic events like Brexit absorb a lot of time and effort.

Players in the securities finance markets also want to continue to provide excellent services to their clients today and into the future. This requires them, as well as keeping the lights on (complying with regulations), to invest in technology platforms to innovate, create a unique selling point and remain competitive. This can range from exploring new markets, developing new products for their clients, and exploiting a wider range of asset classes and transaction types to stay ahead. In addition, there is a large array of new technology to explore and take advantage of from cloud computing, distributed ledger technology (DLT), big data, artificial intelligence (AI), machine learning, robotics and the services offered from a wide range of fintech vendors.

Clients are also looking to use new business models, including the utilisation of new trading venues, central counterparties (CCPs) and gaining benefits from changes in the industry as and when they happen, such as the utilisation of non-cash collateral in the US.

Complying with regulations in the context of increasing competition, challenged margins, a strong desire to stay ahead while engaging in new technologies and service providers presents a complex set of challenges for our clients.

The pressures on cybersecurity, confidentiality and data protection have added a new layer of requirements and infrastructure. All firms have had to take a fresh look at this area in recent years and the demands are ever increasing.

The critical components for developing and implementing solutions (while achieving all of the above) are: to demonstrate real business benefits in terms of revenue enhancement, reduce cost, risk and fails and with widely defined improvements in efficiency. Ranging from headcount reduction to best use of financial assets. To 'do more with less', the mantra since 2008, has never been so demanding.

## What approaches are clients taking to meet these demands?

Our clients have adopted a multi-pronged approach, both facing the challenges and exploiting the opportunities in today's market place.

Decisions around whether to extend existing, often legacy, technology or to invest in a new tech stack and platform is a well-trodden path when evaluating short term requirements versus long-term benefits. This conundrum remains true today, however, with newer technologies to consider arriving at a pace and not necessarily fully road tested. The choices are harder than ever to make. Other decision points are faced when looking at implementation models. Whether considering a hosted software-as-a-service (SaaS) model, cloud or traditional server-based platform, clients are looking for the right solution for the specific use cases.

Further to the variety of choices around internal build solutions, there are myriad external service providers looking to help clients develop their technology platforms to meet the variety of business needs. Many securities finance brokers, borrowers and lenders have looked to third party vendors.

The network of providers can present clients with trusted, already built solutions that are proven to solve the problems they are challenged with. A large factor to consider with in-house builds is the technology risk around building something brand new from the ground up. Will the infrastructure choice be correct? Will the new platform meet the requirements? Will the solution be flexible enough to meet changing markets, regulation and requirements? At the outset how certain can you be about the full cost of build and

# Technology Challenges

on-going support costs? How can a new build project be resourced securely and consistently without opposing needs pulling staff away? Large scale builds are notoriously difficult to size from cost and time to market perspectives.

Outside the technology choices, banks are making decisions on resourcing options too. On-shore, off-shore, near-shore, outsource and a combination of two or more. The various models have their challenges and benefits.



***A large factor to consider with in-house builds is the technology risk around building something brand new from the ground up***



Another question our clients have asked themselves is how best to deploy their highly skilled internal IT resource. Typically, the answer seems to be that the internal builds are kept for those solutions that banks have particular skills in, and that helps the business develop a competitive advantage—solutions that differentiate firms from their competitors.

For commoditised processes and functions that players need to execute in order to do business, it makes absolute sense to use third-party providers.

This approach also presents its challenges such as standardisation and interconnectivity between providers.

## **How does Pirum approach technology challenges, innovation and continually meeting client demands?**

We start with having the right teams in place and by combining strong business and technical knowledge—this is key.

Pirum was founded by strong technologists with securities finance expertise and has a strong culture of questioning the status quo, challenging each other, and creating and building innovative solutions to complex problems. Highly skilled engineers bring together the highest levels of business knowledge with technical know-how to deliver services and high levels of straight-through automation for clients.

Pirum's product owners bring deep subject matter expertise and a breadth of client relationships. Developing new products and services has included setting up design partner groups to ensure clients are kept updated and that services meet requirements. An agile (scrum) project process and frequent releases to clients means that we are able to deliver functionality and receive and incorporate feedback on a frequent basis. This enables our product teams to innovate and iterate solutions continually. This delivers the services that clients need.

Our services need to show strong business benefits to our clients as described above. Part of that is managing the costs of a solution. Delivery via the SaaS model means that the implementation and cost of ownership for clients is low. Further to this, we have made the onboarding process as painless as possible. Integration for clients is simplified because we translate data to our model, rather than requiring clients to do this for us. The SaaS model means clients don't require software or hardware to be installed locally, nor do they face any upgrade burdens.



Investing and managing large systems projects is expensive for businesses and carries a risk of failure and/or overrun. Clients only pay for proven services once they're available to use with their data already integrated—this removes the downside risk clients normally take on when they want to invest in software to help their business.

All of Pirum's resources are on-shore and multi-disciplined product teams are collocated, enabling highly effective communication and minimal overhead. With SFTR, for example, we were ideally placed to deliver a market leading solution as we already had a deep understanding of the data, understanding of the regulation and can focus our post-trade team on delivering the solution.

A rich model of partnerships with other service providers within the securities finance world provides excellent connectivity and assists us with time-to-market of solutions, and reduced costs of each client needing to build the connections themselves.

Mutualisation of product, engineering and infrastructure resources means that the cost of solution delivery is much lower for each client versus an in-house project. This enables clients to focus their own technology teams on the functionality which differentiates them from competitors.

Clients need confidence in the reliability of services being delivered to them. At Pirum, we've built our extensive production system monitoring which alerts us of issues 24 hours a day. This benefits clients as we're able to catch issues with their systems and resolve them directly with client IT support teams, usually before any impact is felt by the business users.

Pirum has invested in the latest tools for automated testing, automated software build and deployment. This minimises the number of incidents impacting clients and makes it easier for us to be very confident in releasing new features on a regular basis. Providing reliable service is key to our clients, so the infrastructure we've invested in is resilient and designed to minimise impact in the event of a

disaster. We test our failover and backups multiple times a year to make sure they work and the team know what to do when a disaster happens.

Pirum is able to combine the deep experience of securities finance, a mature technology platform and significant experience with client compliance together with cutting edge technologies and innovative solutions.

Through our business model, clients can gain the benefits of Pirum's solutions to meet many of their needs and focus valuable internal resources on getting ahead of the rest.



***Investing and managing large systems projects is expensive for businesses and carries a risk of failure and/or overrun***



Through this approach, Pirum enables clients to meet the challenges and exploit the opportunities in today's market.



# SFTR: Implementation and impact

The first SFTR reporting obligation will take place on 11 April 2020, and it is important to start the preparation without delay, according to Fabien Romero of IHS Markit

As part of the policies identified by the Financial Stability Board (FSB) to increase transparency across securities financing transactions (SFTs), the European Union introduced the Securities Financing Transaction Regulation (SFTR). The regulation includes a number of new rules for market participants, including a requirement to report all SFTs to an approved trade repository (TR).

The SFTR regulation is aiming to bring transparency on SFTs, based on three principles:

- Transparency of reuse (article 15): Reuse of collateral will be subject to conditions.
- Transparency towards investors (articles 13 and 14): Undertakings for collective instruments will be to disclose the use of SFTs and total return swaps to their investors.
- Transaction reporting (article 4): Counterparties will have to present SFTs in a European Market Infrastructure Regulation (EMIR) style report to TRs.

Regarding article 4 of the SFTR regulation, as of December 2018, the European Commission has adopted the level II legislation (regulatory technical standards [RTS] and implementing technical standards [ITS]) presented by the European Securities

and Markets Authority (ESMA) in the final report submitted on 31 March 2017. Following the end of the scrutiny period on 13 March 2019, the RTS and ITS have been published in the EU's Official Journal. These will enter into force on 11 April 2019 (20 days after publication). The implementation will take place in four phases (see figure 1), according to the type of firm needing to report.

SFTs are defined as a repurchase transaction, securities or commodities lending or borrowing, a buy/sell-back or sell/buy-back transaction, margin lending transactions restricted to the prime brokerage activity or a total return swap transaction (only for the disclosure requirement - article 13).

The entities in securities finance products required to report include firms with European entities and all the branches of those entities; European branches of non-European entities; and financial and nonfinancial firms are required to report.

If both sides of the transactions are in scope, then both sides need to report—double-sided reporting (see Figure 2).



For UCITS and alternative investment funds (AIF), the management company is the company responsible for the reporting. It's worth highlighting that delegation of reporting is allowed. Transactions to which a member of the European System of Central Banks (ESCB) is a counterparty should not be reported under SFTR. These transactions should, however, be reported under Markets in Financial Instruments Regulation (MiFIR) (article 2, RTS 22).

## Transaction reporting under SFTR

### Reporting timing

All transaction reports must be presented by T+1 to TRs (midnight universal time coordinated [UTC]), including the collateral if it is known at the point of trade. Where collateral is not known at the point of trade, it is reported on S+1. When the firm's reporting obligation starts, any existing trade with a maturity greater than 180 days is reported, or where there is no maturity, a trade that remains open for 180 days after the initial reporting requirement will also need reporting to the TR.

### Data fields needing reconciliation

Once reported to the TR, a trade-level reconciliation takes place (intra TR and inter TR), if both parties to the trade are in scope for reporting.

The TR will report back any breaks for firms to rectify, no later than T+2. The tolerances for matching are very limited; hence the fields need to match perfectly for most of them (see Figure 3).

## Common challenges faced by the industry when implementing SFTR

### Data aggregation

- Extensive dataset stored in several disparate systems
- Ability to extract all life-cycle events
- Extensive use of legal entity identifiers (LEIs)
- SFT taxonomy

### Reporting Structure

- Challenging reporting timings
- High-volume reporting and complex event type/report type reporting structure

- Challenging process for some reporting entities that have not been exposed to any transaction reporting regime
- Complex XML message structure

### Double-sided reporting

- UTI creation, management and dissemination
- Extensive transaction information to be shared between both reporting counterparties
- Phased implementation generating asynchronous double-sided reporting
- Large number of fields required to be matched with very low tolerances
- Lack of fields standardisation that could potentially lead to high ratio of unmatched transactions

### Resourcing

- Currently industry workflows are not easily leveraged, therefore, require the implementation of new workflows and the modification of the supporting target operation model
- Additional operational burden requiring significant additional technological and operational resources

## Unique transaction identifier and double-sided reporting

In order to satisfy the dual-sided reporting requirements, unique transaction identifier (UTI)—and several other fields—will need to be shared between counterparties (see Figure 4). Therefore pairing/matching transactions before reporting to TRs will greatly facilitate the consistency of the information with the double-sided reporting.

UTIs must be reported consistently by both sides of the transaction. LEIs and UTI are the key fields supporting the intra- and inter-TR reconciliation. TR uses the combination of LEI of the reporting entity, LEI of the other counterparty and the UTI of the transaction to perform intra- and inter-TR reconciliation. Therefore, firms will need to be able to generate and publish UTIs as well as ingest UTIs from counterparts. The entity responsible for the generation of the UTI is decided, generally, by a bilateral agreement between counterparts or by the ESMA SFTR waterfall process. In many cases, a third party such as a multilateral trading facility (MTF), CCP or post-trade reconciliation service will generate the UTI, which both parties must use.

## Timeline of reporting

Many firms will face significant challenges in meeting the reporting timescales mandated by SFTR, due to the degree of manual processing that still exists across the industry, and especially in repo.

Any manual intervention within the workflow slows the process and has the potential to introduce errors. Firms have an opportunity with the implementation of SFTR to transform the way the industry works, through more widespread adoption of automated platforms for trading, confirmation and life-cycle management, moving from end-of-day to intraday reconciliation and break management.

## ISO 20022

Reports must be delivered to the TRs using ISO 20022 message standards. The equivalent standards for Markets in Financial Instruments Directive (MiFID) were published in May 2017, that is, eight months before the original go-live. A candidate message for ISO 20022 has been published on 16 March 2019, allowing market participants and TRs to create and test the data translations and mappings requirements.

## Implementation plan and operational impacts

### Business impacts

It is clear that the implementation of SFTR will have significant impact on securities finance businesses and how they operate. The expected business impacts can be categorised as follows:

### Technology

When considering the significant effort that needs to take place to gather and manage all the data required for the reporting of action types, and considering that the SFT-related data often resides in disparate systems across sometimes siloed business lines from several entities, it is pretty clear that a data warehousing approach to support the data management of SFTs would not only make the

support of the SFT reporting easier but also provide additional benefits:

- Enhanced business intelligence
- Increased system performance
- Timely access to data
- Enhanced data quality
- Historical intelligence

Furthermore, leveraging specialised vendors in the securities finance world will significantly reduce the burden of the implementation while improving the quality of the reporting, thanks to pre-reporting reconciliation tools.

### Processes

- Life-cycle events booking will have to be booked on the same transaction (UTI) as the one used by the counterparty
- Agent lender disclosure (ALD): SFTR reports will force disclosure earlier to meet the T+1 reporting deadline
- Pre-reporting reconciliation and matching services will be expanded from the securities lending markets to the repo markets in order to improve the quality of the reporting
- Delegated reporting: Some firms will choose to offer delegated reporting to some of their underlying clients
- Supporting SFTR live: firms should leverage existing infrastructure to support the automation to help mitigate the potential volume of breaks they may encounter

### Resources

SFTR will impact the life of staff supporting the SFT businesses, particularly regarding automation of processes and controls. How client reporting, delegated reporting and transaction reporting are performed and resourced will be critical to the success of the project.

This may result in additional headcount needs, new or changed job descriptions, skills and personal objectives, and of course people will need to be trained in the detailed operation of the new process and technology.

# SFTR Insight

## Cost or investment?

The budget allocated to the implementation of the SFTR regulation can vary depending on what the firm would like to do:

- Achieve minimum compliance?
- Delegated reporting as a revenue stream?
- Implement data warehouse with a larger scope than just SFTR?

Depending on the scope of the implementation, the cost and the complexity of the solution will vary. It is clear that the implementation of the SFTR regulation will be a challenge for the securities finance industry due to the complexity of its data requirements, the dual-sided reporting and the reporting timelines.

Although the first reporting obligation will take place on 11 April 2020, it is important to start the preparation without delay as there is much to be defined and implemented. There are, as well, significant benefits that can be found while implementing SFTR, which can create competitive

advantages for organisations that are willing to implement a plan that goes beyond 'just' achieving the minimum compliance.

SFTR will force the securities finance market to become more automated, especially in the post-trade reconciliation for repos, and will provide standardisation across the industry.

**Fabien Romero**  
SFTR product director  
IHS Markit



Figure 1

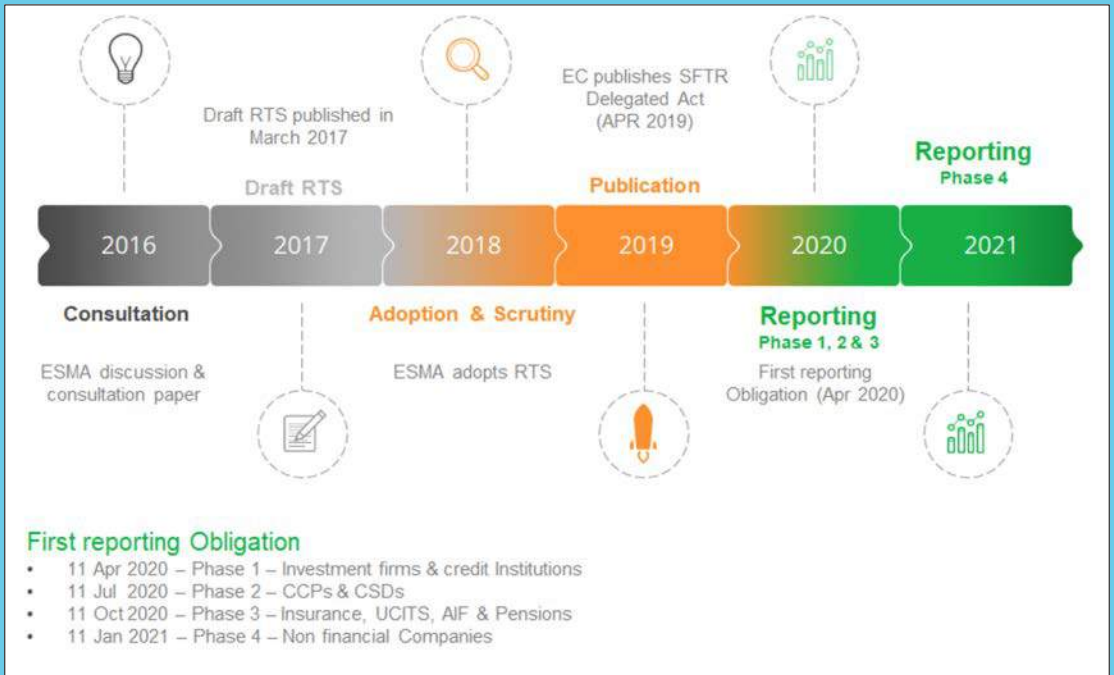




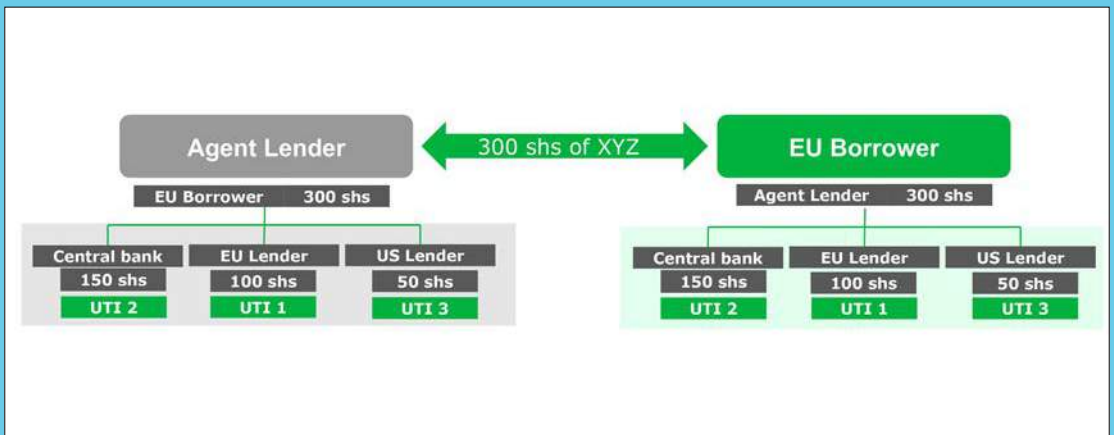
Figure 2

		Counterparty B				
		Parent	EU	EU	Non-EU	Non-EU
Counterparty A	Parent	Branch		Non-EU	EU	
	EU		Both	Both	Both	Counterparty A
	EU	Non-EU	Both	Both	Both	Counterparty A
	Non-EU	EU	Both	Both	Both	Counterparty A
	Non-EU		Counterparty B	Counterparty B	Counterparty B	Neither

Figure 3



Figure 4





# We're ready for SFTR. Are you?

Sunil Daswani of Trax talks through the key challenges and what to remember in the lead up to the go-live date of SFTR reporting

In just under a year from now, the first phase of the Securities Financing Transaction Regulation (SFTR) reporting obligations will come into force. That may still seem a long way away, but as we know from the second Markets in Financial Instruments Directive (MiFID II), the European Market Infrastructure Regulation (EMIR) and a host of other regulatory regime change—and don't even mention Brexit—it's not. As most securities finance practitioners will appreciate, the clock is ticking and the race is on.

In 2017, early birds EquiLend and Trax, the post-trade services arm of MarketAxess, began working together on a joint SFTR solution designed to make client migration to the new regime as swift, painless and advantageous as possible. This was launched to market

in late 2018, and several major clients from our industry-wide SFTR client working group are now proposing to adopt the solution. In addition, as I write this article in early 2019, we're offering a live test environment for the SFTR Solution, for all firms to test their eligibility, data enrichment and business validations processes in a single place.

Having reached this point, what's been clear to me during the solution rollout is that there are still many questions surrounding the what and why of SFTR. This article, therefore, serves two purposes, to draw out what we believe are the most important and pressing challenges and opportunities of the SFTR, and to describe in brief how the joint SFTR Solution can help our clients to face them head-on.

# SFTR Outlook

## One: the key challenges

There is no doubt that SFTR will precipitate an extra reporting and control lift in securities finance functions across the industry. That is evident when you outline, even in brief, the challenges and requirements of the new regime.

### Setting up and on-boarding of underlying principals and their respective legal entity identifiers (LEI's):

- LEIs are not stored in front-end systems today and will need to be going forward
- Disclosure of their underlying principles (beneficial owners) will create challenges for the borrowers of the data received from lenders
- Out of scope entities still need to have an LEI, for example, third-party non-EU entities will still have work to do if they are a counterparty

### The need to have a unique trade identifier (UTI) generation, sharing and management throughout all lifecycle events:

- All new transactions will be required to have an execution timestamp

### The ability to manage collateral allocation at beneficial owner/counterparty level:

- Trades with known collateral will be reportable on a T+1 basis
- Where collateral is not known at the point of trade, it is reportable on S+1
- Omnibus collateral structures are not conducive for automation and straight-through processing (STP)

### Careful management of lifecycle events for securities lending, repo and margin lending transactions:

- Unlike MiFID, all lifecycle events that impact any of the reportable fields need to be reported through to termination

### Dealing with the huge volume and complexity of data:

- Difficulty sourcing up to 40 percent of the required reportable data. For example, governing agreements and versions are some of the challenges
- Sources state that there may be in excess of 100 million transactions that are reportable daily

### The phased implementation with backloading of data will create reconciliation issues industry-wide:

- Reporting requirements are phased but UTIs will still need to be generated and reportable by the in-scope party only

## Two: A unique SFTR Solution from not one, but two market leaders

The key benefits of the SFTR Solution can be summarised as follows:

- A complete front-to-back solution from the point of trade to trade reporting
- Access to the leading securities finance trading platform, EquiLend's Next Generation Trading
- Access to industry-wide UTI generation and sharing portal
- The Trax GUI provides complete visibility and audit trail of every step in the reporting lifecycle
- Supports lifecycle event management, loan and collateral allocations and centralised post-trade services
- A complete reporting solution including enrichment, eligibility and break management either via direct or delegated reporting

Trax is ready for clients to undertake detailed user acceptance testing (UAT) now, with a fully live test environment, so clients can really accelerate their implementation projects.

The SFTR solution has been built to be modular. This is of importance to clients, as it means that clients can tailor their product by choosing either a complete end-to-end solution, a single component to complement their existing framework or solution or something in between. That makes it potentially more cost-effective.

While we expect the regulation to increase the use of electronic trading via EquiLend's Next Generation Trading, or trades that are agreed bilaterally, the SFTR Solution can still offer the mechanism to share and enrich data including the UTI. Clients can match trades with any provider and use Trax Insight to validate and enrich each transaction. To ensure flexibility, the fully enriched and validated data can



be returned to your regulation operations teams to report to your chosen trade repository utilising the 'prepared reporting' module.

Furthermore, Trax Insight allows for careful exception management with detailed analytics and benchmarking against your peer group. The dashboard also allows lenders, where they are acting as an agent, to provide access to the underlying beneficial owners, whose responsibility it is to report transactions. This can be on a read-only basis to satisfy their clients that their reporting obligations are being dealt with in a timely manner by their agent.

No matter how you choose to do your reporting or what part of the SFTR service you wish to take, we have created a community sharing portal to address the concerns we have heard from our clients about ensuring UTI's can be shared between counterparties from a single hub. This is known as the Trax UTI Portal.

Finally, an additional important element of what we provide is the expertise that clients can derive from a team of practitioners, with client-side experience, from two securities finance solution providers who can advise on providing a solution which fits your company and needs. Whether it's agency, principal lending or margin lending, prime brokerage and delta one, prop trading or treasury desks and repo or asset management portfolio, managers. We can help all those who all fall under the reporting requirements.

## What to remember as we get closer to the go-live date

So, to close, my pick of six key items to remember for SFTR is:

- **Easter weekend:** SFTR Phase 1 goes live on Easter weekend 2020
- **Backloads mean everyone must have shops in order:** Any open loans after 180 days of your Phase go-live date need to be backloaded, so this data will need to be recorded and maintained to report in the SFTR standards
- **Sharing of UTIs:** The Trax UTI Portal can assist with addressing industry concerns
- **Early commencement of UAT Testing is critical**

**to pick up issues:** At least six months is usually required once the onboarding has been completed (if using the SFTR solution). This can take some time depending on the complexity of client set ups

- **Consolidation and minimising the number of vendors in the process and also across different regulatory reporting regimes:** At Trax, all regulatory reporting can be completed on the Trax Insight dashboard including, EMIR, Authorised Publication Arrangement (APA), Approved Reporting Mechanism (ARM) and now SFTR
- **Post implementation impact:** It's not all about day one. Consider the nuances of different markets, lifecycle management, the volume of transactions and changes (not just to static data but changes with any part of the transaction from regulation, to counterparties to clients)

Regulatory reporting is here to stay. Trax has experience of over 30 years with global regulators to provide seamless solutions to clients, meeting the ever increasing and complex regulatory reporting requirements. We strongly believe we offer clients the ability to report transactions accurately, completely and in a timely manner to ensure minimal management of exceptions through a single platform connected to trade repositories, national competent authorities and our Trax UTI portal.



**Sunil Daswani**  
SFTR product manager  
Trax



# Growing above ground

After going live over two years ago, David Raccat explains how Wematch has successfully extended its scope of products to a whole range of securities financing structures

## **Wematch has been live for more than two years now, what would you say are some of your main achievements?**

After implementing an initial proof of concept (POC) on a niche product—total return swaps (TRS) on European equities—we have managed to successfully extend the scope of products to the whole range of securities financing structures, for example, TRS, securities lending and repos. Today, we can consider the securities financing platform to be riding on the initial wave, far beyond POC, with 52 legal entities which have been onboarded and close to 600 users in both the Asia Pacific and Europe. Finally, the extension to other asset classes has been instrumental in our achievements as well, with the successful rollout of equity derivatives (exotics) and delta one platforms, which are both now up and running.

## **What is in your roadmap for the coming year?**

The most important milestone that we are about to close is the go-live of our interest rates platform. All of the work that has been done with the teams at J.P. Morgan, who we have been collaborating with for the past six months, is now coming to an end. We will be delivering this platform to the industry soon. Secondly, all the work which we are starting now in cooperation with Société Générale is focused on improving our offer on equity

derivatives products. Thirdly, we are working on multiple initiatives with our clients to see how we can leverage our technology and matching engines to answer any internal need they can face.

## **Is the securities finance industry open or reluctant to innovation?**

The securities financing industry has been developing over the last decades in a way which makes it sometimes difficult to leave a large place to innovation. Securities financing products being, by nature, very operationally-driven, means that all of the underlying processes have been pushed to their extreme. The consequence of this is that innovative initiatives are in some instances facing an industry which has, on the one hand, made a lot of effort to streamline processes but which, on the other hand, did not leave a lot of room of innovation.

The operating models and the associated workflows are very streamlined, however, we still see areas where manual processes and operational risks make our users' life difficult. This is where a lot of innovative solutions can come into play to address those risks and help the dealers focus on what is creating value for their bank. Regulation and the Securities Financing Transactions Regulation (SFTR) cannot be taken as the only one excuse for innovation, as SFTR is going to happen and the changes that will happen are more operationally driven to ensure that the regulatory bodies

reach the level of granularity and reporting that they are looking for. Innovation, which will eventually impact the industry, is tackling multiple areas, like digitisation of the dealing process, transparency/best execution, collateral optimisation and smart allocations, cross-product matching, all-to-all initiatives disrupting the traditional agency to dealer ecosystem, and obviously blockchain and tokenisation of assets/collateral. All those initiatives will not be delivered at the same time for sure but will impact the landscape of securities financing at some point in time.

### What have been the main challenges for an initiative like yours?

Of course initial resistance to change has been a challenge when we have introduced the solution, however, we are very happy today to see the momentum on the securities financing platform. We are receiving thousands of interests on all structures daily, being securities lending (name specific and collateral upgrades/downgrades), repos, and total return swaps (specifics and financing). The market data is looking pretty busy every day and the nearly 60 users who are permanently connected can enjoy multiple opportunities to share their interests and to get a match. The platform can now welcome any trade structure and offers total flexibility on the contract (reverse securities lending, reverse repos in addition to vanilla structures) and on the collateral options—bilateral, tri-party, pledge, in addition to options related to rating, average daily volumes, financials, sizes. We have enriched the platform so that the users can replicate what they are doing through customised negotiations. We anticipate to reach 1,000 users by the end of the year and we welcome all non-users to reach out to us and to receive their log-in link.

### What is the impact of SFTR on your offering?

SFTR will impact securities lending and repos matched through the platform. The impact is expected to be pretty light as will not be involved in the reporting per se. However, when a trade is printed through the platform, we will be providing the unique transaction identifier and then potentially connect with a service provider who could help the client in their SFTR reporting.



***We anticipate to reach 1,000 users by the end of the year and we welcome all non-users to reach out to us***



**David Raccat**  
CEO and founder  
Wematch Securities Financing



# Transforming the world of Securities Finance.

At Stonewain, we understand the importance of being secure and agile, which is why we created a fully-integrated technology solution 'Spire'. Spire's architecture meticulously integrates with your organization's IT system, consolidates workflows and cohesively performs with other proprietary systems.

**It's time to give your business the Spire Advantage.**

- Global Stock Loans and Borrows
- Collateral Management & Optimization
- Repo/Financing
- Agency Lending
- Cash Management
- Regulatory Locates



# Inside HQLAx

Find out what services HQLAx has to offer

## Technical operation

HQLAx achieves its key benefit—ownership transfers of baskets of securities without physical movement of the underlying securities—by building a separate administration. This administration meticulously tracks the lifecycle of each trade and its associated assets. Critically, ownership changes are recorded here and recognised by all platform members.

## DLT

HQLAx uses distributed ledger technology (DLT) to build the lifecycle administration of trades and assets. Lifecycle records are stored by parties that need to know about them. Changes are recorded by storing a ledger transaction that describes how new records are created from existing records. Importantly, such a ledger transaction can express an atomic swap of assets. Also, each party can verify that the records it sees have not been tampered with and evolved according to the platform's business rules.

Changes can be triggered by a variety of events: a new trade, a change in an asset's collateralisation status (valuation), reaching a trade's opening or closing time, and so on. Events usually result in one or more ledger transactions that are appended to the distributed ledger.

## Corda

HQLAx implements its business logic on top of Corda Enterprise, a state-of-the-art distributed ledger platform developed by R3. Members of the HQLAx platform form a logical business network. Each member runs a node that is part of the global Corda network, which has recently gone into production. This global network provides essential shared services such as a directory service (mapping logical names to network addresses), an access control service, and resolution of the conflicting transaction. These services are run by the Corda Network Foundation.

HQLAx relies on these global network services but does not share sensitive trade details with them.

## Privacy and security

Corda transactions are distributed only to members that have some stake in the transaction. A transaction that describes a swap of two digital collateral baskets (DCRs) owned by banks A and B is distributed to A and B, but not to bank C. Each bank sees and records only transactions that it is a party to.

The Corda network is a permissioned network. Only parties that have previously been admitted to the network can communicate with one another—this is cryptographically enforced.

## Eurex and TTP connections

HQLAx interacts with several systems. First, it learns about trades by receiving them from the Eurex trading platform. Lifecycle events, such as the opening and closing of a trade, are communicated back to Eurex, which informs traders.

Second, a separate trusted third party component interacts with triparty agents and custodians. It responds to ownership change events that it receives from HQLAx. Conversely, it informs HQLAx about key events that affect the lifecycle of assets (for example, reuse or changes in collateralisation status).

## Roadmap

The short-term technical roadmap is focused on the platform's go-live later this year in Europe. Interesting future development opportunities include broadening the product scope beyond digital collateral records to include digital cash records or other asset classes such as trade receivables, precious metals and commodities. This could be accomplished by either tokenising these asset classes directly on the HQLAx platform, or perhaps by interoperating with other DLT platforms.





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# Notes

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# Broadridge®

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 and capitalise on what's next.

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.

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.

Broadridge's in-depth expertise in both securities finance and trade reporting regimes including US (CFTC), Europe (EMIR, MiFID I and II), will enable clients to adapt to SFTR smoothly while minimising operational disruption and reducing the resource impact of complying with multiple concurrent reporting mandates.

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

[www.broadridge.com](http://www.broadridge.com)



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Comyno is a fintech software and business consultancy boutique with a clear focus on all securities finance related topics. For more than ten years we are specialists in securities lending and repo, collateral management, treasury and liquidity management, clearing and regulatory topics.

Our expertise combines strategic advisory and digital IT-platform technology. We deliver tailored solutions for a real straight through processing with various connectivity options to our clients.

Comyno also offers in-house workshops and training for all security finance and treasury-related products. Comyno's C-ONE Enterprise suite is a digital securities finance trading platform built to deliver straight-through-processing. It offers a real-time front-to-back office solution which at the same time facilitates the interaction to numerous third party service providers such as electronic trading platforms, tri-party collateral agents, trade repositories and CCPs.

C-ONE offers various data management technologies and data analytic tools within a single digital platform. It has an intuitive and easy-to-navigate customised dashboard/cockpit using distributed ledger technology. The plug and play technology provides various analytical tools such as:

- C-One Collateral
- C-One Trading
- C-One Risk Management
- C-One SFTR Reporting
- C-One Fairness Algorithms for the automated allocation of fund inventory to trade requests.
- Customers can choose to use the entire platform to run their Securities Finance business, or alternatively choose any functionality as a module to bridge the gaps of their legacy infrastructure as required.

**Consulting:**

Strategic consulting and advisory | project management | business analysis

**Securities finance software:**

C-ONE: Connectivity | trading SFTs | collateral and risk management | SFTR reporting | fairness algorithms

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EquiLend is a leading provider of trading, post-trade, market data and clearing services for the securities finance industry with offices in New York, Boston, London, Dublin, Hong Kong and Toronto. EquiLend is owned by BlackRock, Credit Suisse, Goldman Sachs, J.P. Morgan, JPMorgan Chase, Bank of America Merrill Lynch, Morgan Stanley, Northern Trust, State Street and UBS.

EquiLend operates NGT, the securities finance industry's most active trading platform, as well as a post-trade suite for securities finance operations. DataLend provides performance reporting and global securities finance data to agent lenders, broker-dealers and beneficial owners. EquiLend Clearing Services offers CCP services and connectivity.

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When dealing with complex securities finance markets—from stock borrowing and lending to repo, from securities finance to collateral management—finance professionals need a consolidated view of their positions. FIS Apex Securities Finance and Apex Collateral Management provide you with that advantage.

Making the best use of every opportunity makes best use of capital while remaining focused on the most important priority of all: profit.

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

To be as efficient as possible in the use of the inventory for funding, yield enhancement and compliance with regulatory capital requirements and collateral management, you need to bring together all of the asset pools for the securities finance business and your collateral requirements across business lines, and across the whole enterprise.

Firms that make this move can increase yields by making smarter decisions around what assets are allocated to lending programs and collateral requirements. Global optimisation allows you to use assets to cover exposures in one jurisdiction with excess balances from elsewhere. And, you can mobilise assets across functions, transforming them into higher quality assets when needed to meet the ever-increasing regulatory demands for collateral.

Efficiency and confidence. The best of both worlds.

[www.fisglobal.com](http://www.fisglobal.com)





*Access. Automate. Analyze.*

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Combining Wall Street expertise with Silicon Valley technology, GLMX has developed a thriving ecosystem for the execution and management of securities financing transactions. Using state-of-the-art streaming technology, GLMX facilitates a wide array of SFT including multi-variable negotiation, lifecycle event management, straight-through-processing, 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.

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The Hanweck Borrow Intensity Indicator is the first product to offer real-time transparency into securities lending rates. The product mines data from the equity options market to derive stock borrow rates and term curves in real-time, available throughout the trading day. Hanweck Borrow Intensity Indicators rely upon proprietary calculations that transform real-time implied borrow data into time-series with constant maturity characteristics. Indicator data is available for all securities that have listed options.

Indicators are constructed from weighted observations across the entire volatility term, providing a novel constant-maturity view across time that can serve as a powerful tool for observing intraday departures from historical patterns.

The dynamic term structure of securities borrow rates provides insight into the intensity and expected duration of stock loan hard-to-borrow conditions.

- Real-time transparency into securities lending rates
- Rapid signals on rising shorts and squeezes
- Unique insight into multiple financing rates across time
- Valuable data for risk estimation and factor models, portfolio construction, and smart beta approaches

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HQLAX is a financial technology innovation firm that uses distributed ledger technology to enhance collateral mobility in the global securities financing markets. HQLAX is creating a fit for purpose, standardised, single marketplace to enable institutional treasurers to:

- More easily fine-tune liquidity metrics for intraday, liquidity coverage ratio and net stable funding ratio liquidity requirements, and
- Better manage margin pledge obligations for counterparty credit exposures.

In March 2018, Deutsche Börse Group and HQLAx announced a strategic partnership to develop a blockchain solution for collateral swaps in the securities lending markets. The joint operating model will improve collateral mobility across a fragmented securities settlement ecosystem. Unlike in traditional settlement, there is no movement of securities between custodians in the HQLAx operating model. Instead, a digital collateral registry is used to record ownership transfers of baskets of securities, whilst the underlying securities remain static in the custody location of the collateral giver. This helps market participants manage collateral more efficiently and improves fluidity across siloed collateral systems and locations.

Market access to the HQLAx operating model will be provided by the renowned Eurex Repo trading system. A newly created trusted third-party entity, owned and operated by Deutsche Börse Group, will interface between the distributed ledger technology and legacy securities infrastructure, leveraging well-established triparty collateral management services from multiple triparty agents. The joint operating model will go into production in Europe later this year.

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IHS Markit®

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IHS Markit Securities Finance dataset covers more than \$20 trillion of global securities in the lending programmes of more than 22,000 institutional funds. It includes more than eleven years of history with over three million intraday transactions. Our data is sourced directly from leading industry practitioners, including prime brokers, custodians, asset managers and hedge funds and is recognised as the independent source of such data in the marketplace. Our securities finance offering provides insight into market sentiment and trading transparency from a macro to individual stock level. It also delivers tri-party repo data and analytics to provide enhanced visibility and insight into the market for collateral cash investments, demand, pricing and usage. Collateral and funding managers of prime dealers, banks, money market funds, securities lenders, hedge funds, insurance companies and corporations can benefit from our comprehensive combination of repo and securities lending data and analytics.

IHS Markit offers a fully hosted data and reporting solution for Securities Financing Transactions Regulation (SFTR) that sets an industry wide standard, providing the foundation needed to reconcile trading activity down to the unique trade identifier (UTI) and legal entity identifier (LEI) level of granularity. The SFTR solution will also offer participants turnkey connectivity to trade repositories.

Markit Securities Finance Consulting provides fully independent research to institutions already active, or considering becoming active, in the securities finance market. This includes repo, securities lending and prime brokerage activities. With many years of consulting and practitioner experience in securities finance and programme analysis, the team can draw on the most globally comprehensive daily stock loan database with over 11 years of the transaction history.

With a reporting infrastructure built around the unique Markit Securities Finance data set, the consulting team have a proven track record in providing:

- Performance benchmarking
- Programme evaluation
- Exposure reports
- Collateral reviews
- Spotlight surveys

[www.ihsmarkit.com/msf](http://www.ihsmarkit.com/msf)



**THE FOUNDATION  
FOR SECURE  
MARKETS**

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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. OCC stock loan activity in 2018 was up 17.2 percent from the previous year with nearly 1.4 million new loan transactions.

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Pirum Systems is the market leader in real-time automation and connectivity services to the securities finance industry, providing unparalleled connectivity with counterparties, CCPs, trade and collateral venues. Pirum Systems is ready to assist you in connecting.

Pirum provides a secure processing hub which seamlessly links market participants together, allowing them to electronically reconcile and process stock lending and repo transactions as well as providing exposure, margin and collateral management solutions. Our clients benefit from increased processing efficiency, greater STP, reduced operational risk and improved profitability.

We deliver highly innovative and flexible services which are tailored to fully support the industry's complexities and evolving business processes. With our extensive existing client base and our renowned service quality, we are invariably seen as the users' service provider of choice.

Pirum's Services include:

- Tri-party and bilateral connectivity
- Exposure calculation and reconciliation
- Margin and collateral management
- CCP gateway
- Real-time contract compare
- Billing reconciliation
- Billing delivery
- Real-time mark automation
- Automated returns
- Automated loan release
- SPO and other payment processing
- SFTR reporting

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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.

- Global stock loans and borrows
- Agency lending
- Repo/financing
- Collateral management and optimisation
- Cash management
- Regulatory locates

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At Trading Apps, we have recognised the tangible value that speed, automation and efficiency can provide to a securities finance business. Since our foundation in 2011, we have developed targeted applications that continue to raise the bar regarding trade and process automation, transparency, revenue optimisation and risk mitigation.

We have demonstrated our flexibility by connecting to numerous underlying systems; our speed through quick deployment; and our sophistication by designing workflow's that are transformational and have an immediate impact on the bottom line.

[www.tradingapps.com](http://www.tradingapps.com)



A MarketAxess Company

Trax, the post-trade services engine of MarketAxess, 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.

Trax processes on average over one billion cross-asset class transactions annually on behalf of its community of over 600 entities including approximately 12 million fixed income transactions. Trax operates an approved publication arrangement and approved reporting mechanism for MiFID II trade and transaction reporting in addition to providing support for other regulatory regimes.

Trax is based in London and was originally established in 1985. Acquired by MarketAxess in 2013, Trax is a trading name of Xtrakter Ltd. and is a wholly owned subsidiary of MarketAxess Holdings, Inc.

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## SECURITIES FINANCING

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Wematch is a web-based tool disrupting the dealing process on the securities financing and equity derivatives markets. Wematch optimises matching of interests on financing structures (TRS, repos and SBLs) and equity derivatives over-the-counter (OTC) structures and integrates features to monitor events during the lifecycle of the trades. Wematch offers additional dashboards for compliance and operations teams, allowing for proper controls and integration into the client's infrastructure. All trades are confirmed by an Financial Conduct Authority-regulated broker.

Wematch SF covers total return swaps on equities on specific and financing structures, securities borrowing and lending enabling lenders to upload their inventory and borrowers to cover their short positions, together with collateral upgrades/downgrades, and repos on both specific names and financing structures.

Wematch EQD covers OTC equity exotic products including call vs call, quanto forward spreads, outperformance and best of worst of strategies on both index and single stocks underlyings. Other equity derivatives OTC/listed products are under development for release in 2018.

[www.wematch.live](http://www.wematch.live)



# THE FRONT-TO-BACK SFTR SOLUTION FROM TRAX AND EQUILEND

Complete front-to-back solution from point of trade to trade repository reporting.

Access to the leading Securities Finance trading platform, EquiLend NGT.

Best-in-class Trax GUI provides complete visibility and audit trail of every step in the reporting lifecycle.

Supports lifecycle event management, loan and collateral allocations and centralized post-trade services.

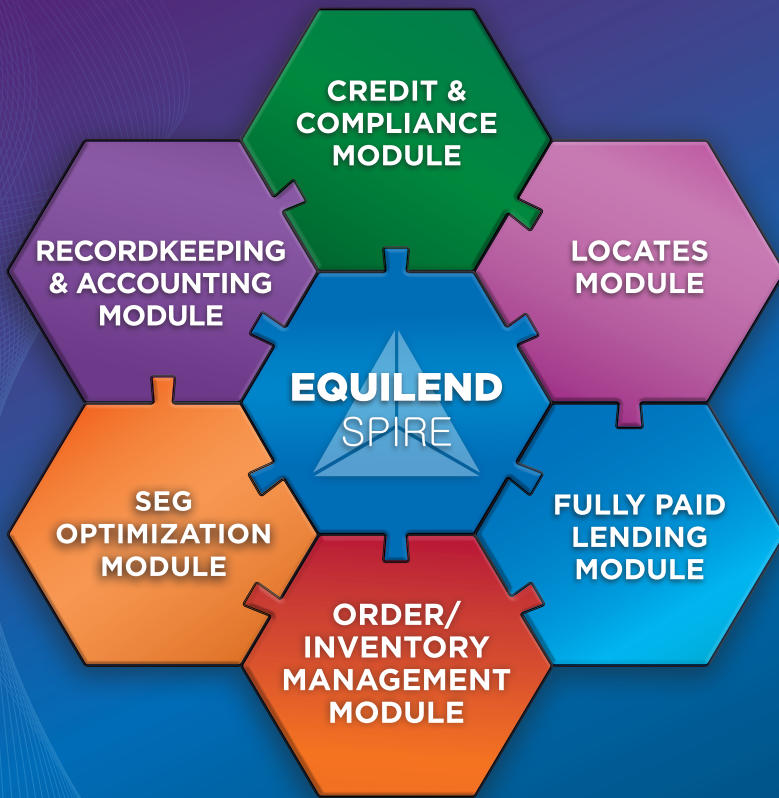
30+ years of experience in regulatory reporting over multiple regulations.

Access to industry-wide UTI generation and sharing portal.



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# **EQUILEND SPIRE**

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Flexible, Modular, Customizable:  
A Bespoke Technology Solution  
For All Your Securities Finance  
Business Needs

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