



Charting the Future of Post-Trade

Findings from the Post-Trade Task Force

April 2022

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1 Preface

Wholesale financial markets have historically benefitted from innovation which typically brings a wider range of financial services to more clients, faster and cheaper, than had been the case.

But innovation in post-trade processes and client onboarding processes has at times lagged behind other parts of financial markets. As a result, processes are often manual and duplicative; and failures upstream can cause significant problems downstream.

The complexity of manual processes creates unnecessary challenges for market participants. It can pose risks to operational resilience meaning trades and collateral that fail to settle as well as excessive delays to on-boarding new clients. More generally it imposes ongoing costs on market participants, which ultimately increase the cost of financial services.

Addressing these issues requires a concerted effort, not just within individual firms but for the financial services industry as a whole. Furthermore, private sector market participants are well-placed to help identify the key challenges that need to be resolved.

That's why the Bank and FCA brought together a Post Trade Technology Market Practitioner Panel in 2019. The panel built a common understanding of some key issues in post-trade and related processes including identifying three "case studies" (non-economic trade data, client onboarding and uncleared margin) where change is particularly urgent. In order to maintain momentum on these issues the panel launched a Post-Trade Task Force to identify potential reforms in this area.

This report offers a comprehensive diagnosis of the key problems in current post-trade processes as well as recommendations for the next steps of market-led reform. We welcome the work of the Task Force which will help raise awareness of these issues in order to stimulate further innovation in this area. The report identifies solutions and best practices which, if sufficiently widely adopted, could substantially improve outcomes.

We'd like to thank David Hudson, the members of the Task Force, and all the members of the working groups for contributing their time, effort and considerable expertise in working on these issues, and identifying practical ways forward, in the interests of the market as a whole.

And we welcome the clear recommendations of the Task Force: to encourage wider adoption of efficient best practices; closer standardisation; and less duplication of work.

We look forward to seeing a new post-trade industry leadership group take their recommendations forward.

Andrew Hauser

Executive Director for Markets
Bank of England

Edwin Schooling-Latter

Director of Markets and Wholesale Policy
FCA

2 Foreword

2.1 The Post-Trade Task Force was established to improve the efficiency of resilience of post-trade processes and operations

On 20 June 2019 the Governor of the Bank of England announced several actions to implement the recommendations of the Future of Finance Review¹. One of these was to convene a Post-Trade Technology Market Practitioner Panel to explore how market participants could leverage technological improvements to deliver a more efficient and resilient post-trade ecosystem². That reflected that post trade systems and processes are of vital importance to the functioning of the financial system but are areas where innovation has lagged. The Panel issued its report in June 2020³ which announced the launch of this Post-Trade Task Force and identified 3 areas for the Task Force to consider, in detail: Non-Economic Trade Data, Uncleared Margin and Client Onboarding.

The aim of the Task Force was to bring together experienced financial markets participants currently active in carrying out post-trade processing activities relating to the three areas specified by the panel including:

- exploring the potential to leverage better technology solutions to improve the efficiency of post-trade processes;
- feeding into the Bank of England's discussion paper on 'Transforming data collection from the UK financial sector'⁴;
- reviewing ongoing initiatives in post-trade and the appropriate mechanisms and/or bodies for taking these forward; and
- publishing a report summarising its work.

2.2 It has agreed a set of recommendations and proposed a new body to take this work forward

The Task Force was set up because the financial services industry considered that it was important to make progress in the three areas selected and that a useful step towards this would be for cross-industry market participants to meet regularly to consider what scope there might be for market-led reform. For many participants it was their first opportunity to discuss these issues with others across the industry covering both buy and sell side firms and the consensus was that this cross-industry dialogue was illuminating and helpful⁵. We are all therefore grateful to the Panel for having facilitated this.

Fixing many of the problems in post-trade would require standardisation. But many of these problems could be substantially improved by increasing use of existing best practice models and standardised terms; by increasing use of existing technology; or by better connecting existed automated solutions. In the longer term, work on developing future integrated technology solutions may enable further benefits

¹ See [Future of Finance: Review on the outlook for the UK financial system \(bankofengland.co.uk\)](https://www.bankofengland.co.uk/future-of-finance-review) June 2019

² See Priority 5 on page 12 of the Bank's response to the Future of Finance Review [New economy, new finance, new Bank \(bankofengland.co.uk\)](https://www.bankofengland.co.uk/new-economy-new-finance-new-bank) June 2019

³ See [The Future of Post-Trade \(bankofengland.co.uk\)](https://www.bankofengland.co.uk/post-trade) June 2020

⁴ See [Transforming data collection from the UK financial sector - Discussion Paper \(bankofengland.co.uk\)](https://www.bankofengland.co.uk/discussion-paper) June 2020 and [Transforming data collection from the UK financial sector: a plan for 2021 and beyond | Bank of England](https://www.bankofengland.co.uk/transforming-data-collection) February 2021

⁵ Competition law guidance was provided to the participants to ensure that discussions were compliant with competition law

Having considered the three issues for over a year, the Task Force has reached a consensus and established a list of recommendations which can be found on page 7. The Task Force is proposing the creation of a new post-trade industry leadership group made up of experts from across the industry, to implement these recommendations and continue the benefits of the cross-industry dialogue. In summary, the recommendations ask this group to:

- develop, adopt and promote a set of best practices around (i) sharing LEIs early in trade life-cycles; and (ii) efficient, electronic processes for sharing SSIs.
- work to improve adoption of best practices; define, gather and publish industry-wide metrics; and investigate the creation of a fully digitised system
- convene forums to discuss: standardising document requirements; making existing platforms more interoperable; and/or creating a single passporting platform.

One overarching theme that came across in all three areas was that solutions need to reach a critical mass of market participants to be effective. This challenge is why the problems identified have persisted for a long time. It will therefore be vital that market participants continue to work together if there is to be any significant progress.

I am pleased with the progress that the Task Force have been able to make in this past year to deliver this report and arrive at the recommendations it sets out. I am hopeful that, if we can continue to work together, this can mark the start of some genuine progress on these issues.

2.3 I would like to thank all the participants for their contributions

The remainder of this report summarises the work done by the Task Force and the three working groups and sets out their findings and recommendations. I would like to thank all the participants in the Task Force and working groups for their time and efforts in considering these issues and putting together this report. It is very encouraging to see how well industry participants from different parts of the industry can work together to address common problems. I would also like to thank the Bank of England for their observations and support during the process, their help in connecting the groups with relevant government departments and their indication of support for the recommendations. Thank you also to the FCA for their observations and support and to Linklaters for their advice throughout the process and their assistance with putting together this report. I very much look forward to participating in the new post-trade industry leadership group and working with existing industry bodies to take forward the Task Force recommendations.

David Hudson

Chair of the Post-Trade Task Force

Overview: Findings and Recommendations of the Post-Trade Task Force

Post-trade issues are costly,
slow innovation and increase risk

Non-economic
trade data



Sharing non-economic trade data late or manually can cause high costs and trade fails

Uncleared
margin



Inefficient processes can cause high costs and settlement fails

Client
onboarding



Current processes duplicate effort and take far too long

In many cases, solutions already exist - but best practices need to be more widely adopted

Many solutions also need to be more standardised and more interoperable.
Future integrated technology solutions could enable further benefits

Legal Entity Identifiers (LEIs) are used too little and too late; and Standard Settlement Instructions (SSIs) are too often exchanged manually

There are efficient uncleared margin processes, but these are not widely enough used

Each firm requires different documents from new counterparties, leading to substantial additional work



The Task Force recommends the creation of a new post-trade industry leadership group, which should:

Develop and promote a set of best practices around (i) sharing LEIs early in trade life-cycles; and (ii) using efficient, electronic processes for sharing SSIs

Improve adoption of best practices; define, gather and publish industry-wide metrics; and investigate the creation of a fully digitised system

Convene forums to discuss standardising document requirements; making existing platforms more interoperable; and/or creating a single KYC passporting platform

3 Task Force Recommendations

The Task Force recommends the creation of a new post-trade industry leadership group

The Task Force recommends the creation of a new post-trade industry leadership group (the **Leadership Group**) made up of willing participants from across the industry, including smaller market participants, to work alongside existing industry bodies where appropriate, to carry out the following tasks.

Non-Economic Trade Data

The Leadership Group should develop and promote a set of best practices around (i) sharing LEIs early in trade life-cycles; and (ii) efficient, electronic processes for sharing SSIs.

The Leadership Group should develop a set of best practices at asset class level for both counterparty identification and settlement processes and should work towards adoption of those practices to lead the way for other industry participants to follow.

They should first identify which asset classes to prioritise based on where the result would be most cost effective. The best practices could be based on the ideas set out in section 5 of this report, namely:

- 01 Use of **LEIs as early as possible** in all trade lifecycles
- 02 **Publication of metrics** to show which market participants are not using LEIs in this way
- 03 **Standardisation of data models and message formats** for the automated settlement process
- 04 **Definition of the ideal process** for automated SSI processing with supporting standards
- 05 Conducting a **market survey** to understand why existing automated settlement solutions are not more widely used
- 06 **Optimising current technology** for settlement to ensure that it is used to full advantage within the SSI workflow
- 07 **Leveraging any emerging technology** for settlement that might offer a better and more cost effective alternative that might be more widely used
- 08 Creating an **industry wide education programme** around the difference between good and poor discipline in relation to settlement
- 09 Exploring the means by which **smaller clients can be incentivised** to utilise automated settlement systems, subject to compliance with applicable legal and regulatory obligations
- 10 Encouraging **further use of global custodians** who face industry platforms and submit SSIs on behalf of a large number of small firms who process settlement manually
- 11 Considering what **metrics on operational performance** could be collected and published to highlight where problems with settlement lie. These might include: (1) speed to send allocation from asset manager to broker (2) speed to confirm trade between sell side and buy side (3) number of confirmation mismatches (4) speed to send trade to repository (5) speed to match trade at repository (6) number of exceptions during matching at repository and finally (6) fail rate. The metrics would need to work for all market participants without imposing too great a reporting burden or creating issues around publication of confidential information or other anti-trust concerns
- 12 Discussing with prospective providers of **consolidated tapes** for economic trade data, whether their proposed solutions could also be used for non-economic trade data.

Uncleared Margin

The Leadership Group should devise next steps to increase adoption of best practices; define, gather and publish industry-wide metrics; and investigate the creation of a fully digitised system

The Leadership Group should work on the following three areas, in partnership with ISDA, to try to drive change in this area:



Engaging with existing vendors to discuss ways to evolve tooling and workflow, to simplify interoperability and convergence between existing utilities and vendor solutions, and to ease adoption for all counterparties.

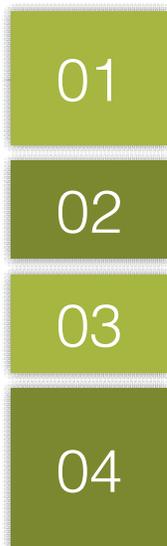
Considering how to develop, implement and **publish useful industry wide metrics** that could provide visibility as to common issues and pain points and help identify systemic risks and set acceptable benchmarks. These metrics could focus on the percentage of margin calls processed using market utilities, straight through processing rates, average margin dispute rates, average margin settlement fail rates and the overall value of margin collected and posted. The metrics should work for all market participants and should not impose too great a reporting burden or create issues around publication of confidential information or other anti-trust concerns.

Investigating the **creation of a fully digitised system** for the whole transaction lifecycle. This could begin with consulting with vendors on the proposals set out in this document, to analyse their technological and financial viability. Ultimately, any solution would need to be adopted internationally to fully effect change. Priority focus could be on settlement through tokenisation or digitisation.

Client Onboarding

The Leadership Group should convene forums to discuss standardising document requirements; making existing platforms more interoperable; and/or creating a single passporting platform.

This could include a round table discussion of the 4 steps set out below, with an open invitation to other interested industry participants and vendors of solutions in this space.



01 Establish **standardised document requirements** and data definitions and agreed mapping of data to KYC regulatory requirements for all client types. Standards need to be issued on the precise form of documents that would be acceptable and a longer expiry time for documents should also be recommended.

02 Initiate detailed discussions with vendors to encourage adoption of standards as set out in recommendation 1 and explore the ability to **make existing platforms much more interoperable** using standardised APIs.

03 Alternatively, discuss with vendors the option of creating a **single passporting platform**, accessible to all participants via an API or a web portal. This option would require further work to consider its costs and commerciality.

04 As shown by the work of the DCMS, it is likely that government departments will also have a role to play to facilitate change. In this regard, the group would welcome the opportunity to **liaise with BEIS when it is ready to recommence its work on digital identities for organisations** and further explore of how Legal Entity Identifiers could be used in any such identities.

4 Task Force summary and key findings

4.1 Introduction

The Task Force was asked by the Panel to make progress with three areas within post-trade systems and processes supporting wholesale market activity, namely Non-Economic Trade Data (**NETD**), Uncleared Margin (**UM**) and Client Onboarding (**CO**). Three working groups were set up to look at each area and feed into this final Task Force report.

Task Force members were drawn from a broad range of firms active in capital markets and post-trade processing, including investment banks, asset managers and market infrastructure providers. They were selected in accordance with published selection criteria and comprised a diverse set of knowledgeable and experienced financial markets participants with backgrounds in technology and post-trade operations and drew on the membership of the Panel⁶. David Hudson was invited to chair the Task Force by Andrew Hauser, the Executive Director for Markets at the Bank of England and Chair of the Panel. The Bank of England and the Financial Conduct Authority attended as observers and Linklaters provided legal support. Three working groups were set up to consider the three specific areas identified by the Panel and report into the Task Force. The Task Force considered whether it would be useful to include representatives from technological solution providers but decided it would be important to be neutral and impartial between them and hence did not include them. However, to assist with their deliberations, members of the Task Force and working groups met with some solution providers and also with some industry bodies and government departments, details of which can be found in the acknowledgement section of this report.

The recommendations of the Task Force are set out on page 7. They propose the founding of a new Post-trade industry leadership group (the Leadership Group), made up of willing participants from across the finance industry including smaller firms, to build on the work and momentum created first by the Panel and now by the Task Force, to take forward work on the recommendations that relate to NETD and UM and to host an open invitation round table discussion on the proposals that relate to CO. In relation to the UM recommendations, the Leadership Group will work closely with ISDA to leverage the work that they have previously done in this area.

4.2 Problems in post-trade are costly, slow innovation and increase risk

As stated in the Panel report, post-trade issues matter because:

1. they raise the cost of financial services;
2. they provide the bedrock data on which front end services are built and if they are not operating effectively that will hold back innovation; and
3. if they do not work effectively, they pose significant risks to operational resilience which is of great importance to firms and regulators.

When post-trade is streamlined and efficient it underpins the resilient provision of financial services to the real economy but when it is not it poses a systemic risk that may only become fully apparent during a time of crisis.

If the UK can lead on improving these issues it would significantly enhance the attractiveness of the UK financial sector and its ability to positively differentiate itself.

⁶ [Post-Trade Task Force - criteria for membership selection \(bankofengland.co.uk\)](https://www.bankofengland.co.uk/post-trade-task-force-criteria-for-membership-selection)

4.2.1 Inefficient use of non-economic trade data causes trade fails and may lead to broader risks

Inefficiencies and lack of automation in the use of NETD are causing fragility, risk and lack of innovation in the wider financial market.

In a survey conducted by DTCC⁷, 78% of respondents highlighted missing or incomplete SSIs as the principal pain point causing trade fails. DTCC estimated that if the global failure rate is assumed to be 2% then this would lead to costs and losses in the industry of up to US\$3 billion per year. These costs are known and understood by market participants but, with competing claims on resources, they are often deemed bearable when the system is functioning tolerably and so no firm feels strongly enough to take action to try to address them.

However, should another crisis occur in the financial sector then delays arising from inconsistent data will present a significant systemic risk increase to all participants as trade volumes rise, and this will particularly impact smaller market participants who in general have less automated systems. At that point, the friction costs of the lack of automation will become unacceptable but it will be too late to take the steps needed to reduce them.

There is, therefore, a contingent risk inherent in the current level of data consistency between participants. As noted, in times of stress, this risk might contribute to more general systemic risk, and is therefore particularly important to address.

4.2.2 Inefficient processes for exchanging uncleared margin causes high costs and settlement fails

As stated in the Panel report, inefficient and protracted processes in the OTC collateral and margining process may be holding the industry back from moving to more effective intraday collateral and liquidity management.

A paper by DTCC - Euroclear Global Collateral Ltd⁸ looked at the implications of collateral settlement fails. It said that the average annual value of bilateral OTC derivative collateral assets received and delivered for 42 sell-side firms was US\$889.5 billion using 2015 ISDA data. With an average industry collateral settlement fail at an estimated rate of 3% this puts the annual value of settlement fails at US\$27 billion. The true figure will likely be much higher if all sell side and buy side firms were included.

This level and value of fails is creating fragility and risk within the financial system.

4.2.3 Client onboarding is inefficient and takes far too long

Currently the CO process is very protracted. Several studies have been undertaken to try to estimate the size of this issue (see for example the GLIEF KYC research findings⁹ and the Bank of England paper on SME access to finance¹⁰). From these it appears that the average time taken to onboard clients in the financial sector is around 6 weeks but sometimes the process can take many months. The GLIEF study shows that senior salespeople spend an average of 1.5 days per week onboarding new client organisations. This incurs costs that will ultimately be borne by the client.

The process is also complex, requiring information to be obtained from various sources, some of which will be inconsistent. This complexity is causing increased costs but also makes it difficult for firms to evaluate risks and increases the likelihood of fraud, money laundering or market abuse.

⁷ [DTCC Roadmap to Automation.pdf](#)

⁸ [Implications of collateral settlement fails \(garp.org\)](#)

⁹ [gleif-research-findings_challenges-onboarding-client-organizations-in-banking-sector_v1.0-final.pdf \(slide 14\)](#)

¹⁰ [Open data for SME finance \(bankofengland.co.uk\) p.10](#)

The length and complexity of the process is causing significant detriment to clients because they are unable to trade or otherwise do business with the prospective provider during the time that the onboarding is taking place. Because this problem exists throughout the whole industry, these accumulated delays will be impacting investment levels in the UK as a whole, leading to decreased demand and allocative inefficiencies.

Having an efficient CO process could enhance the UK's competitiveness and support the government's ambition to demonstrate the UK's leadership on the global stage and ability to attract investment and trade from beyond the EU.

4.3 In many cases, solutions already exist - but best practices need to be more widely adopted

4.3.1 Fixing many of the problems in post-trade would require standardisation

Lack of standardisation of certain specific commonly used words or terms or documents used by industry participants causes many problems which would fall away if those words, terms or documents could be standardised and used in the same way by everyone (in ways that would not constrain innovation or involve the standardisation of a metric on which parties compete). This theme came across in all the working groups. In the NETD group, standardising data models and formats within the SSI process was seen as crucial to improving the settlement process. In the UM group, a common understanding of the meaning of certain words and terms, further standardisation of legal documentation where appropriate, standard margin calculation models and agreed communication protocols were viewed as key building blocks to improve the process. In the CO group, it was thought that if there could be accepted standards on what exact form of documents could be used and what data within those documents was acceptable as evidence to meet money laundering requirements, this could significantly improve the process.

Without standardisation it will be hard to move forward with any technological solutions. Because of competition law issues, any standardisation exercise would need to be done on an open and transparent basis, preferably overseen and/or conducted by a standard setting body.

4.3.2 But many of these problems could be substantially improved by increasing use of existing best practice models and standardised terms...

If increased standardisation can be brought in, it will be key to its success that it is widely adopted within the industry. The UM group identified that there have been several attempts within their area, particularly by ISDA, to set out best practice guidelines and standardise data inputs and margin calculation methodologies but they have not solved the problem because they are not sufficiently widely used.

Standardisation therefore, on its own, is not enough if the standards are set by a body that cannot enforce or incentivise their use among sufficient numbers in the market.

4.3.3 ...by increasing use of existing technology...

In the UM and NETD groups it was noted that there were existing automated solutions that would significantly improve the functioning of those areas but again there was insufficient use of those solutions, particularly among smaller market participants. They identified various reasons for this but in general the reasons relate to it not being cost effective for smaller or infrequent participants to adopt the technology, often because there is insufficient standardisation to make the technology efficient or because there are too many different and unconnected vendor solutions. Even in larger firms, it can be the case that the IT budget needed to invest in improving post-trade processes, struggles to compete with revenue generating or regulator-driven change, especially when the time taken to see a benefit can be long.

Technology alone is also not enough therefore, if it is not sufficiently widely used. To improve uptake there would need to be a concerted effort by all parties to promote awareness of the solutions and encourage their use, possibly by using financial incentives (to the extent consistent with legal and regulatory obligations) or by publishing metrics so that it is clearly visible which entities are causing problems.

4.3.4 ...or by better connecting existed automated solutions.

Where automated solutions do exist, or are developed, it is crucial that they are interoperable or can be accessed seamlessly from different systems. Without this, their use will never be widespread enough to solve the problems they aim to address.

In a competitive market however, there are insufficient incentives or indeed disincentives for vendors of solutions to work together to solve industry wide problems.

4.3.5 In the longer term, work on developing future integrated technology solutions may enable further benefits

Longer-term solutions to these problems would involve developing integrated technologies that could be used by all market participants. Given that such solutions seem unlikely to appear organically, work could be done now to investigate how these could be developed using common standards (see Uncleared Margin recommendation 3 above.)

4.3.6 Any initiatives to address these issues will be more successful the more support they have from firms and industry bodies in other jurisdictions

Any solution that only operates within the UK will never fully solve these problems given the multijurisdictional nature of the financial sector and its participants. For successful outcomes, firms and industry bodies will need to liaise with their counterparts in other key jurisdictions to work towards harmonising systems.

4.4 What did each working group do?

4.4.1 The Non-Economic Trade Data group found that many problems were caused by using Legal Entity Identifiers (LEIs) too little and too late; and too often exchanging Standard Settlement Instructions (SSIs) manually

This group analysed the problems caused when it is not possible to identify clearly the parties to a trade. They concluded that the solution is for all market participants in all markets to use Legal Entity Identifiers (LEIs) as early as possible in the trading workflow. These have been mandated in some areas where they work well. In other areas their use has been encouraged both by the Bank of England and by GLEIF but take up is still not sufficient and it is notable that efficiency in these areas is sub-optimal. The group has made suggestions for further efforts to encourage their use (Non-Economic Trade Data recommendations 1-2) and hope that the detail set out in this paper, including about the problems caused when they are not used, will form part of the process to encourage market participants to use them more widely.

The group also analysed the process for establishing where settlement should take place. They concluded that there are automated solutions using Standing Settlement Instructions (SSIs) which are not sufficiently widely used. They therefore set out some recommendations (Non-Economic Trade Data recommendations 3-10) as to how to improve awareness of these and encourage their use.

In line with the vision of the original Future of Finance paper, the group also considered what a future successful digital solution for settlement would look like and their suggestions are set out in section 6 of this report.

4.4.2 The Uncleared Margin group found there was too little standardisation and too little use of efficient uncleared margin processes

This group analysed the full collateral management process and the existing software solutions and best practice models. They identified why current solutions are not resolving the problems in this area and what the obstacles are to their success. They found that a lack of standardisation of terms and documents is a core problem. Secondly, there are automated solutions that work well but they are fragmented, awareness of them among smaller market participants is not high and for various reasons even where there is awareness, take up can be limited. The group therefore looked at ways to improve current solutions and awareness and take up of them.

In line with the vision of the original Future of Finance paper, the group also considered what a future successful digital solution for the collateral management process would look like and their suggestions are set out in section 7 of this report.

4.4.3 The client onboarding group found there was too little standardisation of document requirements and there was extensive duplication of work where multiple firms onboarded the same client

This group conducted an analysis of the onboarding requirements of the 9 member entities of the group for non-retail clients. The results clearly showed the large number of different documents required and also that only approximately 58% were required by 75% or more of the firms. This work supported the group's conclusion that to improve the CO process it will be important to set some industry standards at least for a core set of documents that everyone can use as the basis for their process.

In line with the vision of the original Future of Finance paper, the group then considered what a future successful digital solution for CO would look like and their suggestions are set out in section 8 of this report.

4.5 Who will take this work forward when the Task Force ends?

This Task Force has brought together senior participants from across the industry. While there were some different ideas about methods, essentially there was a very clear consensus among all the participants about what solutions are needed. The key remaining question therefore is who can action these.

The Task Force proposes the formation of the Leadership Group to carry out the recommendations of the non-economic trade data and uncleared margin groups...

In the case of the UM recommendations the Leadership Group will work alongside ISDA, who have already done much useful work in setting out industry standards and best practices in that area, to see if together they can progress these and increase take up in the industry. Ultimately the aim would be for the participants in the Leadership Group to take the lead in implementing their proposals to drive change in the industry.

...and recommends a round table discussion of the recommendations of the client onboarding group

For CO the situation is different. Industry is aware of the problem, which is significant and long standing. The Task Force has set out some recommendations but they represent a significant undertaking that would require funding and considerable time commitment from those working on them. Industry, vendors of automated solutions and the public sector would need to work together to make any meaningful progress. The Task Force proposal therefore is that the next step, following publication of this report, is for there to be a round table discussion of the recommendations in this area, sponsored by the Leadership Group and attended by representatives of the member firms of the Task Force, with an open invitation to other interested industry participants and vendors of solutions in this space. We hope that this will help to generate further ideas as to how all these parties can work together to make progress in this area.

5 Non-Economic Trade Data Working Group

This section sets out the detail of the work and findings of the Non-Economic Trade Data (**NETD**) Working Group.

5.1 Key Themes

The key themes that came out of the work done in this area were:

5.1.1 Counterparty Identification

While most market participants (apart from some individual investors) have LEIs, many associate them only with derivative trading and regulatory reporting, whereas their use should be encouraged at the earliest opportunity in all trading to facilitate the correct allocation of trades. Despite the efforts of GLEIF¹¹ and others to promote their use, this is not having sufficient impact.

5.1.2 Settlement

- **Standardisation** - There is a lack of standardisation across the settlement process. There is therefore a need to **define SSI data standards and the optimal SSI process**
- **Behaviour** - There is insufficient use of existing automated SSI platforms mainly among smaller market participants. To address this, first a market study could be undertaken to see why this is. Then, to improve discipline in the settlement process, **a series of incentive methodologies could be introduced to support increased use of SSIs**. These could include industry education programmes, and encouragement of increased use of global custodians who can submit SSIs on behalf of smaller firms or encouraging UK fund managers to use automated SSIs.
- **Technology** - The focus should be on ensuring that existing technology is used to full advantage. In addition, there should be an ongoing assessment of emerging technology to see if there is any that might be taken up more widely across the industry because it offers a simpler or cheaper alternative

5.2 The NETD working group

The group that looked at this issue was made up of experts from buy and sell side participants and service utilities who have considerable experience in this area.

The group was chaired by Robert Lamb, Managing Director at BlackRock.

The remainder of the group was made up of senior experienced decision makers from Bank of America, Barclays, BlackRock, Credit Suisse, DTCC, Euroclear, Goldman Sachs, J.P. Morgan, LCH Swap Agent, State Street and XTX Markets. The Bank of England and the LSE joined the working group meetings as observers. Full detail of the participants is set out in Appendix A.

¹¹ The Global Legal Entity Identifier Foundation

5.3 The problem addressed by the working group

The working group aimed to develop proposals to improve standardisation, accuracy and timely exchange of NETD with the objective of reducing the need for trade enrichment; eliminating the need to clean and reconcile data at every point in the trade life cycle to reduce errors and exceptions and to unlock the potential of post-trade data to provide potentially useful insights into trading behaviours.

Problems with inaccurate data are causing significant cost and delay in the financial system creating fragility and systemic risks. For example, in relation to settlement alone, failure to use automated systems accounts for an estimated 18.7% of all securities and foreign exchange trade fails. A study conducted by DTCC in 2019¹² concluded that 100% of firms have failed transactions due to incorrect SSI information. It was estimated that the global fail rate cost was close to US\$3 billion and the volume of SSI related fails could be reduced by up to 54% if the SSI process was automated.

5.4 The steps taken by the working group

Phase 1: The group **looked at 5 use cases** and assessed them by reference to the following criteria in order to select 2 to look at in depth:

- scale of the problem - how does the current problem impact the industry's ability to grow;
- adoption/support - what would be the likely adoption or support for the solution;
- ease of implementation - how quickly could a solution be adopted and how quickly would the return on investment be realised;
- flexibility/global application - how flexible is the solution and how easily could it be adopted globally; and
- likelihood of success - how successful do we think a solution to the use case would be

Phase 2: Two sub-groups were created to **analyse the 2 use cases identified (LEIs and SSIs)** considering how the problem in that area has arisen; what its impact is; how far reaching that impact is and what factors drive the frequency and severity of the issue. They also conducted a deeper dive into some example problem scenarios.

Phase 3: The group discussed the findings of the sub-groups and **created a set of recommendations**. Their aim was to find data that could be a single source of truth, that could be easily consumed, was readily available and could be adopted in a standardised format without the need for alteration. They also agreed to aim to promote principles and models and be agnostic as to platform providers and focus on the UK whilst also keeping in mind the global implications and applications of their recommendations.

¹² DTCC Roadmap to Automation.pdf

5.5 The findings of the working group

5.5.1 Phase 1 - Analysis of 5 initial use cases

The group considered 5 use cases: LEIs, SSIs, Product Asset Identifiers, Trade Confirmation/Allocation and Trade Identification.

All financial transactions can be broken down into three core questions:

1. What was traded and at what price?
2. Who traded with whom?
3. Where is delivery/settlement to take place?

The “What and at what price?” question tends to attract a lot of attention within the industry, as these are the core economic components of the transaction, but the “who?” and the “where?” questions are also critical data elements to ensure the efficient settlement of transactions. The increase in execution speed and volume, and changes to market structure and participants over the last 10 years, has created a more challenging world in which to identify, agree and reconcile the “who?” and the “where?” which is leading to increasing numbers of exceptions and greater inefficiency in the market as a whole. The group decided to focus on the “who?” and the “where?” questions, which would include considering the current use of LEIs (part of the answer to “who?”) and SSIs (part of the answer to “where?”) but also more broadly, how the process for answering these questions could be improved.

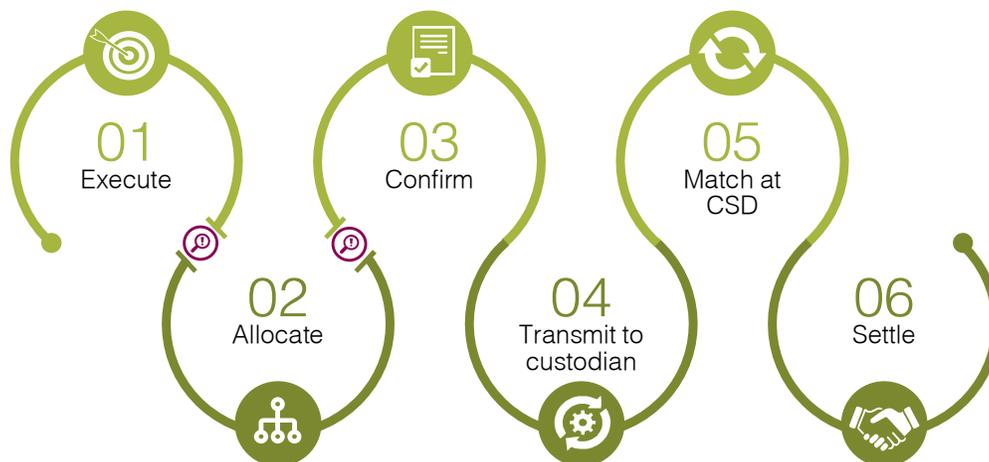
5.5.2 Phase 2 - Analysis of 2 use cases identified for review

Use case 1 - Who traded with whom? Counterparty Identification

This question is often surprisingly difficult to answer. Examples of reasons why this is so are:

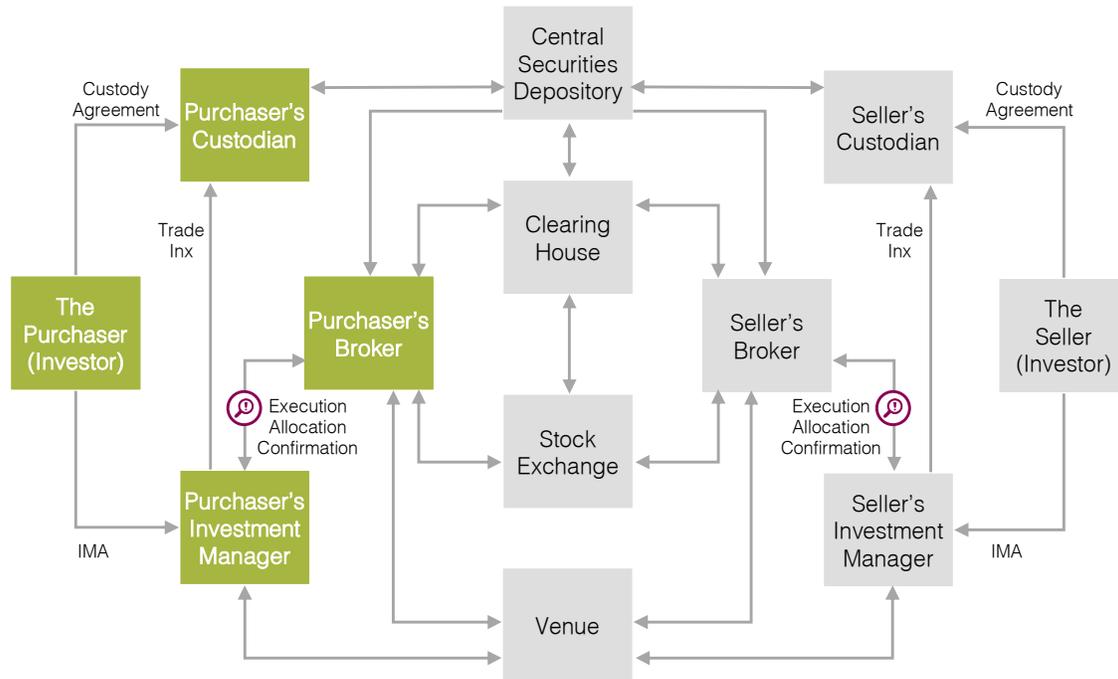
- the creation of trading venues for fixed income has made it easier for more buyers and more sellers to find each other but has also introduced an intermediary between the investor and the broker which can create challenges in identifying the “who?”; and
- the growth in global brokers and global investment managers has created multi legal entity institutions that overlap and trade in multiple markets and jurisdictions. When these institutions trade with each other there can be confusion as to who exactly is trading with whom

The post execution workflow can be summarised at a high level as 6 key steps. The “who” question can cause problems within the first two steps, between Execution and Allocation and Allocation and Confirmation.



Any problem becomes apparent immediately after execution, during the trade booking and confirmation process. The buy-side institution needs to know the counterparty it executed with and the sell-side institution needs to know what investment manager it traded with and also, at the allocation stage, the identity of the underlying investor. If either or both sides record the wrong entity, then it can lead to a cascade of exceptions to resolve as described below.

The high-level industry diagram below illustrates where this issue is felt and where the industry is expending unnecessary resources.



The group identified the following factors that are contributing to these problems with the “who” question:

- **Insufficient use of LEIs** - LEIs are a unique number used to identify every separate legal entity that might participate in the financial markets. LEIs have been adopted quickly and successfully in relation to derivative trading and regulatory reporting but are not used sufficiently often or early enough within cash settled equities and fixed income trading
- **Lack of incentives to change** - There is no incentive or real possibility for any one entity or group of entities in the market to resolve the problem unless all or a large majority of entities do so
- **Complex legal structures** - The more global and complex the legal structure of participating institutions, the more likely it is that there will be ambiguity over exactly which group entity is trading
- **Complex electronic networks** - The move from telephone trading to electronic trade execution has necessitated the creation of a complex electronic network connecting investment managers and investors with brokers. This electronic infrastructure does not necessarily mirror the real world and the legal relationships that exist. For instance, a single electronic pipe could be used by multiple legal entities within the same institution to connect with another institution that also has multiple legal entities, leading to further ambiguity when determining who is executing with whom. This problem also manifests because the networks represent connections between individual people, but those people can trade on behalf of multiple legal entities without disclosing upfront which entity they represent

- **Trading with intermediaries** - Executing via an intermediary, such as a trading venue, where a point-to-point connectivity is not available adds an additional layer of ambiguity

The group also analysed 3 specific problem scenarios relating to the “who?” question. This analysis can be found in Appendix C.

Use case 2 - Where is delivery/settlement to take place? SSIs

The sheer volume of SSIs, the high volume of manual SSI exchanges and the non-standard format and non-frequent nature of SSI exchanges combine to create a significant problem for market participants. The most significant cause of fails at the settlement stage, after lack of inventory, is incorrect or missing SSIs. Manual intervention is necessary to resolve exceptions prior to settlement, especially to remediate incorrect SSIs, and it is estimated that costs for exception handling alone for a mid-sized Investment Manager could be reduced by \$1M - \$2M through automation¹³.

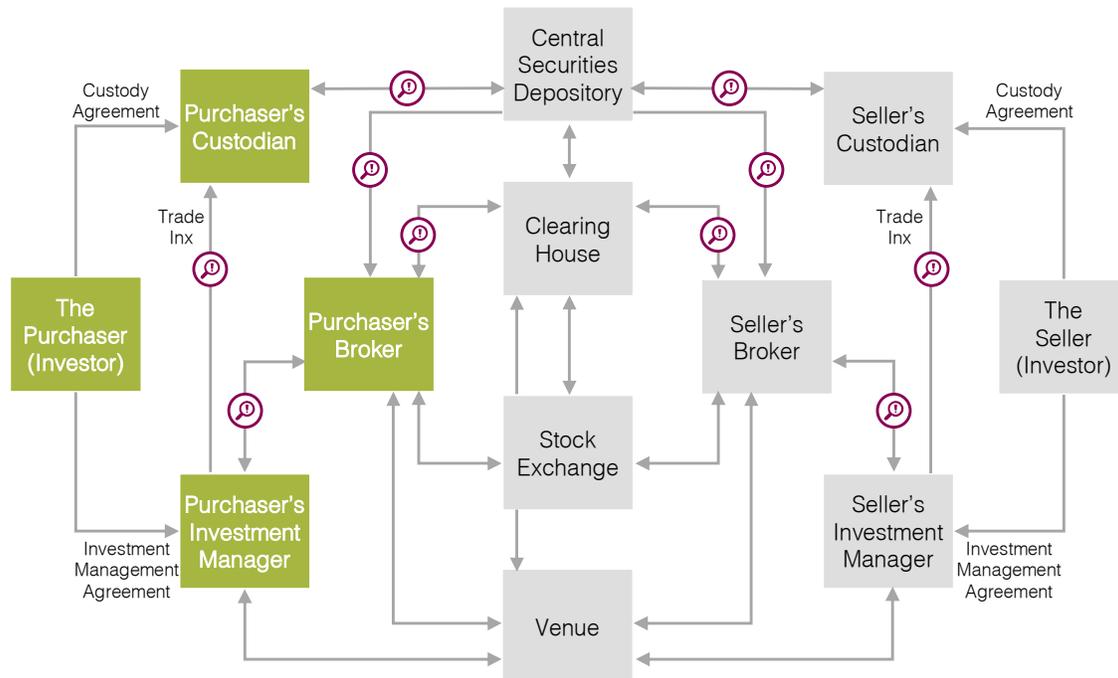
The underlying issue will be a lack of clarity between the buyer and seller prior to execution but the impact is felt most in the last three steps of the life cycle.



While most larger firms use some form of automated system, there is a significant subset of smaller market participants who do not and that is causing the problems identified.

The high-level industry diagram below illustrates where this issue is felt and where the industry is expending unnecessary resources.

¹³ DTCC Roadmap to Automation.pdf



The group identified the following factors that are contributing to these problems with the “where” question:

- **Insufficient adoption of automation** - Barriers of cost and complexity are stopping many smaller client firms using automated solutions
- **Unenforced best practice guidelines** - Best practice guidelines exist but they are not followed by enough market participants
- **SSI override** - It is very common for a correct SSI to be exchanged and agreed at the pre-settlement matching level, only for that SSI to be overridden by an internal database that holds stale SSI data
- **SSI Volume** - Large firms can easily be dealing with over 500,000 individual SSIs, so manually handling SSIs can equate to thousands of hours of effort
- **Counterparty Ambiguity** - If the “who” question has not been resolved earlier in the process this can continue to cause problems at the settlement stage. Often an SSI maps exactly to an LEI but this is not always the case as some entities have multiple SSIs and depositories linked to the same LEI. So even where LEIs are used at the “who” stage this does not necessarily prevent problems at the “where” stage
- **Settlement Outsourcing** - Where settlement is outsourced, it is common to inherit stale SSIs in portfolios that have not been recently traded and there are no triggers to alert that SSIs are out of date
- **Data complexity** - Settlement instructions have complex data formats with large numbers of data attributes which differ based on market and product which thus creates complexity in storage of data
- **Data sensitivity** - Settlement instructions are sensitive information, so it is important that systems for sharing this information between investment managers, market participants and custodians is secure
- **Data format** - Word documents, excel sheets and PDFs are regularly used to provide SSIs, which makes it extremely difficult to automate ingestion of the SSIs

- **Timing** - Many brokers use the “just in time” approach to obtain SSIs when there is a trade however SSIs provided at the client onboarding stage can be out of date or absent

These problems are producing the following impacts and risks:

- **Resource Impact** - A large amount of operational effort is needed (by all parties involved) to process manual/high touch settlement instructions and to validate settlement instructions and client call backs.
- **Technology cost** - the industry incurs significant technology costs to implement automation of the manual processes and reconciliations
- **Fraud Risk** - Delays in validating and changing SSIs present fraud risk to firms if not resolved prior to execution
- **Settlement Risk** - The manual process is error prone and is the cause of many late settlements and settlement fails. Settlement fail resolution also has a significant resource impact

The group also analysed 6 specific problem scenarios relating to the “where?” question. This analysis can be found in Appendix D.

5.6 Possible solutions to the problem addressed by the group

5.6.1 The “who?” question - Counterparty Identification

Whilst the vast majority of market participants have LEIs and they are regularly used in derivatives trading and for regulatory reporting, they are not widely used in cash settled transactions. Institutions such as GLEIF have worked to promote their use but this has not gained sufficient traction. If their use was embedded at the point of execution and allocation (blocks 1 and 2 of the trade life cycle shown in paragraph 5.5.2 above) in other transactions this would solve the multiple costs and problems with counterparty identification, set out in the previous section. In our view any further encouragement to use LEIs from industry or industry bodies is unlikely to have any significant impact. A solution could be the creation of a new cross industry group to develop the ideas set out in this paper into best practice models at an asset class level. This group could work in partnership with existing industry bodies that represent different groupings within the industry to leverage work they have already been doing. When the best practice models have been agreed, the firms who were members of the cross industry group should aim to adopt the practices agreed upon to encourage uptake throughout the industry.

If LEIs were used at the point of execution then the order placement entity would include their LEI on the order placed with the broker or venue. The venue would pass the order placement entity LEI to the broker. The order would also include the expected executing entity LEI to reduce any pre-trade compliance issues, which would show who the investor thought they were trading with. If the investor was wrong in who they thought they were trading with (for example, if they thought it was broker X EU entity but in fact it was broker X UK entity) then broker X could immediately reject the order or provide the correct entity details. During execution, the executing entity LEI would be provided on the execution message back to the order placement entity or to the venue. The venue would then pass the executing entity LEI through to the order placement entity. During allocation, the order placement entity LEI would be included on the allocation message sent to the broker along with the expected executing entity LEI and the LEI of the end investor (if different from the order placement entity). During confirmation, the broker would return the executing entity LEI, order placement entity LEI and investor entity LEI in the confirmation message and therefore complete the circle.

The diagram below illustrates how this flow of information would work if LEI data was shared at the point of order placement.



The guiding principles for this solution are:

- **As Soon As Practical** - The LEI should be shared within the workflow as soon as practical, preferably at order placement
- **Consistent Behaviour** - Success will be limited if this workflow is not adopted across the industry by all relevant participants including investors, investment managers, venues, brokers, exchanges and clearing houses
- **Adoption by leading firms within the industry** - the LEI has existed for many years but has not been adopted as a solution so for success there will need to be a strong signal from the leading firms within the industry that this is what they expect all market participants to do

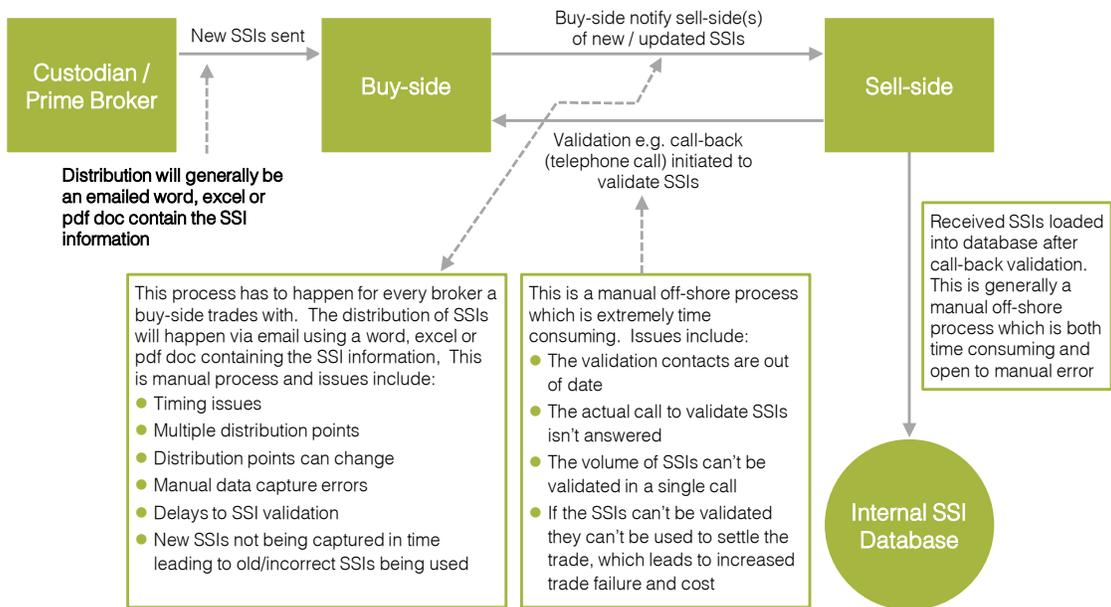
5.6.2 The “where?” question - SSIs

- Define data standards appropriate to the UK market but also tracking global standards. In particular this would mean defining SSI fields and message formats. The goal would be a virtual or physical “golden source” or warehouse of SSIs which was used by all market participants, with data ownership and maintenance protocols and mandatory industry standards for use and maintenance protocols
- Define process standards appropriate to the UK market but also tracking global standards to cover provision, validation, storage and usage of SSIs, ideally creating a mandatory minimum market standard defined in a market wide service level agreement
- Encourage use of existing technology particularly by smaller market participants. It is likely that inefficiency in SSI processing is not a material issue for smaller firms to the degree that would cause them to shift from lower cost manual processing to higher cost automated solutions. A solution to this would be to conduct a market survey to determine why current automated solutions have not been taken up by more market participants and then taking actions to increase their use. These might include:
 - (i) An industry wide education programme looking at the results of low usage of automated solutions

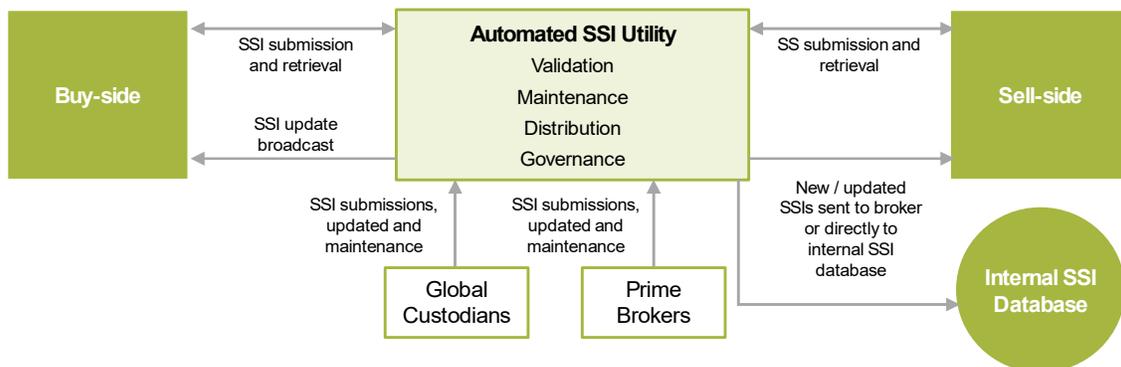
- (ii) Exploring the means by which smaller clients can be incentivised to utilise automated settlement systems, subject to compliance with applicable legal and regulatory obligations
- (iii) Leverage of the global custodian model where global custodians submit SSIs on behalf of the small client firms who process SSIs manually
- Work towards a fully automated process where SSI information is available to all industry participants in a uniform and consistent manner. The priority should be to ensure that current technology is being used to full advantage. There should also be ongoing assessment of emerging technology but that should only be pursued if it is likely to increase take up by market participants because it offers simpler and/or cheaper integration than existing solutions

Below are 2 charts. The first shows how the current system operates when manual interventions are necessary and the second shows how a possible future system might work better.

Manual SSI workflow



Automated SSI workflow



The optimal workflow is likely to have: defined SSI fields and message formats; a universally used source of SSIs for all market participants; universally adopted standards for operational use and processing of SSIs; market standard “golden source” data ownership and maintenance protocols; complete and correct SSIs at client onboarding; easy access for all participants; identification of appropriate timeframes for each aspect of the workflow; interoperability within the UK but also with systems in other jurisdictions; and implementation of a “good to settle” status to prove SSI quality.

5.6.3 Consolidated tape options

One other possible avenue for investigation might be to discuss with prospective providers of consolidated tapes for economic trade data, whether their proposed solutions could also be used for NETD as a potential solution for both the who and the where questions.

5.7 Obstacles to the effectiveness of the solutions identified

- 5.7.1 It may be difficult to persuade some industry participants to invest in the SSI infrastructure to reduce exceptions. Each participant has a different operating model ranging from fully in house to fully outsourced and therefore the incentives to adopt the infrastructure will vary significantly. Smaller firms in particular often do not see a cost benefit to them in switching from manual to automated systems and do not see the inefficiency caused across the wider market by the cumulative effect of participants not adopting industry standards and automated platforms
- 5.7.2 In relation to SSIs, a successful solution will require all participants to behave consistently and be disciplined in relation to ownership of data accuracy and timely updating of data so behavioural change will be needed across the industry. Without complete adoption of SSIs, each entity will need to manage which other entities are using the utility and which are not, and record those that are not separately in their own internal utility and manually update which is inefficient and time consuming
- 5.7.3 There will be costs across the industry in relation to implementation of new technology and new workflows, guidelines, controls and procedures and there will need to be agreement on how those costs will be borne

5.8 Any impact on/synergy with other UK public sector initiatives?

The Bank of England has been a champion of the use of LEIs for some time. This group is very supportive of that work.

5.9 The working group's final recommendations and next steps

The working group considered the possible solutions and what might realistically be achieved by market led solutions. They were agreed that the working group had been very useful because it was the first time that buy side, sell side and infrastructure providers had come together to discuss these topics that were relevant to them all. They decided that, if the industry itself is to find solutions to these problems, it will need to continue this cross industry dialogue.

Their recommendation is therefore for the **creation of the post-trade industry leadership group** (the **Leadership Group**) to take over the work of this group. The Leadership Group should have participants from all sides of the industry including smaller market participants.

This Leadership Group should work, with existing industry bodies where appropriate, to **develop a set of best practices** at asset class level for both counterparty identification and settlement processes and should work towards adoption of those practices to lead the way for other industry participants to follow.

They should first identify which asset classes to prioritise based on where the result would be most cost effective. The best practices could be based on the ideas set out in this report, namely:

- | | | | |
|----|---|----|--|
| 01 | Use of LEIs as early as possible in all trade lifecycles | 09 | Exploring the means by which smaller clients can be incentivised to utilise automated settlement systems, subject to compliance with applicable legal and regulatory obligations |
| 02 | Publication of metrics to show which market participants are not using LEIs in this way | 10 | Encouraging further use of global custodians who face industry platforms and submit SSIs on behalf of a large number of small firms who process settlement manually |
| 03 | Standardisation of data models and message formats for the automated settlement process | 11 | Considering what metrics on operational performance could be collected and published to highlight where problems with settlement lie. These might include: (1) speed to send allocation from asset manager to broker (2) speed to confirm trade between sell side and buy side (3) number of confirmation mismatches (4) speed to send trade to repository (5) speed to match trade at repository (6) number of exceptions during matching at repository and finally (6) fail rate. The metrics would need to work for all market participants without imposing too great a reporting burden or creating issues around publication of confidential information or other anti-trust concerns |
| 04 | Definition of the ideal process for automated SSI processing with supporting standards | 12 | Discussing with prospective providers of consolidated tapes for economic trade data, whether their proposed solutions could also be used for non-economic trade data. |
| 05 | Conducting a market survey to understand why existing automated settlement solutions are not more widely used | | |
| 06 | Optimising current technology for settlement to ensure that it is used to full advantage within the SSI workflow | | |
| 07 | Leveraging any emerging technology for settlement that might offer a better and more cost effective alternative that might be more widely used | | |
| 08 | Creating an industry wide education programme around the difference between good and poor discipline in relation to settlement | | |

6 Uncleared Margin Working Group

This section sets out the detail of the work and findings of the Uncleared Margin (UM) Working Group.

6.1 Key Themes

The key themes that came out of the work done in this area were:

- **Increase standardisation** throughout the lifecycle of the UM process. There is a need for standardised trade and eligible collateral terminology and representation, legal documentation, margin calculation models, and communication protocols
- **Improve awareness of existing automated solutions while encouraging their use**, especially among smaller market participants and those outside the UK jurisdiction, by for example, workshops, promoting participation in industry forums, press releases, reports and articles in leading financial journals
- **Increase the transparency of the use of automated solutions in the market through improved reporting and metrics**. The metrics collected could be on issues like the percentage of margin calls each participant processes using market utilities, straight through processing rates and time to process margin calls and settlements, average margin dispute rates, average margin settlement fail rates and overall value of margin collected and posted, and would help to establish a benchmark and encourage those at the bottom of the list to improve
- **Encourage interoperability between existing automated solutions**. There are many excellent automated solutions available, but they are currently fragmented and only help with parts of the UM lifecycle. The whole system would work much more effectively if there was standardisation that allowed connectivity and interoperability between some of the existing automated solutions
- **Work towards a fully automated centralised system**. This document sets out a vision for how a future fully automated system could operate. A first step could be to engage with vendors in this space to discuss the feasibility and costings of the proposals along with case studies of firms that have implemented full automation from margin call to settlement
- There is a **need for a global solution** to harmonise requirements across key jurisdictions. With many market participants operating in multiple jurisdictions, a multi-jurisdictional solution will be needed to eliminate the bottle necks and inefficiencies in the system

6.2 The UM working group

The group that looked at this issue was made up of experts from buy and sell side participants and service utilities who have considerable experience in this area.

The group was chaired by Sigal Zarmi, Senior Adviser at Morgan Stanley & Co Ltd. until June 2021. She then stepped down and was replaced by Philip Glackin, Global Head of Markets Principal Collateral Middle Office and Operations at J.P. Morgan.

The remainder of the group was made up of senior experienced decision makers from Barclays Bank, BlackRock Investment Management, Credit Suisse, DTCC, Euroclear, Goldman Sachs, J.P. Morgan, LCH Swap Agent, M&G Investments, Morgan Stanley, State Street Bank & Trust Company and XTX Markets Ltd. The Bank of England and the FCA joined the working group meeting as observers and Linklaters provided legal advice. Full detail of the participants is set out in Appendix E.

6.3 The problem addressed by the working group

Bi-lateral derivative trades are not cleared through a centralised clearing system and they use a system of collateral exchange and margining to reduce the risk of uncleared trades. These Over-the-Counter (OTC) trades are typically governed by the International Swaps and Derivatives Association Master Agreement (ISDA MA) but often with a customised Credit Support Annex (CSA)¹⁴ and Account Control Agreement (ACA),¹⁵ which can vary widely. Across the industry, the processes for trade reconciliation, margin calculation, communication between parties about margin payments, resolution of disputes about margin amounts, and payments and physical movement of collateral, and eligible collateral data is not fully standardised or digitised and has to be dealt with by protracted bilateral counterparty and custodian communication, often by email and sometimes even faxes.

This lack of standardisation and digitisation creates significant costs, delay, complexity, inefficiency, fragility and risk within the system.

There are existing solutions aimed at standardising data inputs, digitizing agreements, calculations, eligible collateral representations, margin call and settlement transfers, and reporting such as the ISDA Common Domain Model (CDM)¹⁶, or aimed at standardising margin calculation methodologies, such as the ISDA Standard Initial Margin Model or ISDA SIMM® (SIMM). There are also vendors offering solutions for different parts of the whole OTC life-cycle however, these solutions are fragmented and there is a general perception that they are not suitable for low volume clients, so they have not been taken up sufficiently widely in the market.

The objective of this working group was to try to identify and analyse areas where there is scope to increase efficiency within the lifecycle of these OTC trades and offer proposals for improvements.

6.4 The steps taken by the working group

- Phase 1:** **Analysis of the full end-to-end collateral management process** to consider where the greatest impact could be achieved and what areas to focus on. This led to the decision to split into two sub-groups - one to look at shorter term tactical solutions to improve the system as it currently operates and one to look at a longer term future solution that could transform the entire system
- Phase 2:** **Analysis of existing software solutions** to see what barriers exist to their wider uptake and what improvements could be suggested. A sub-group met with existing suppliers, ISDA, Acadia and TriOptima to obtain feedback to assist with this
- Phase 3:** Consideration of what a **future successful digital solution** for the whole life cycle would need to look like
- Phase 4:** Discussion of the findings from Phases 1, 2, and 3 and **agreement on a set of recommendations** and next steps to drive both short and long term improvements. See section 6.9 below for the outcome of these discussions

¹⁴ The CSA defines the terms for the provision of collateral.

¹⁵ The ACA is a three-party agreement between 2 clients and a custodian used to set out details for segregation of Regulatory Initial Margin or due to 1940 requirements or due to counterparty risks, with Variation Margin

¹⁶ ISDA CDM is a machine-readable and machine-executable data model for derivatives.

6.5 The findings of the working group

6.5.1 Phase 1 - Analysis of the full end-to-end collateral management life cycle

Below is a diagram that summarises the main parts of the collateral management life cycle.



The group identified the following as the key areas causing inefficiencies in the process:

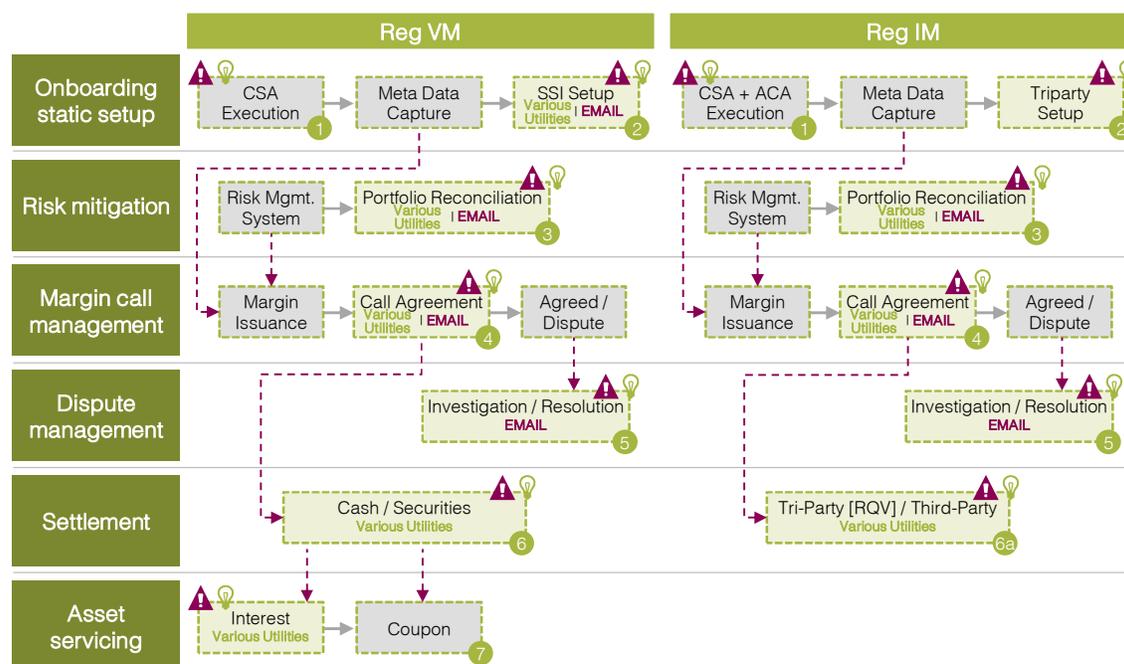
- Lack of standardisation of terminology. Examples of this are: (1) OTC Final Settlement Treatment - some participants interpret this as meaning that the trade should be collateralised until settlement of the derivative and others that it should be collateralised until maturity and (2) FX Grab Time - participants use differing grab timings to mark their derivatives;
- Lack of standardisation of the eligible collateral representation within the CSA and triparty ACA (and additional collateralised products' documentation.) Using a legal taxonomy and clause library alone can drive standardisation and then digitisation, which can mitigate issues at stages 1 and 2 above;
- Difficulties agreeing valuations. Participants have different models for valuing derivatives leading to problems at stages 3 and 4;
- Issues with trade capture at stage 3 can lead to differences in variation margin and initial margin calculations and the lack of golden source valuation leads to challenges at stage 5. Differing variation margin and initial margin calculation models also lead to inconsistencies in how margin calculations are carried out and so to further possibilities for dispute at stage 5;
- A lengthy dispute resolution process which is not automated causing problems at stage 6; and
- Inefficiency in the settlement process at stage 7, including lack of agreement on settlement venue (such as whether domestic or international) at the time of margin call affirmation, difficulties recalling stock that has been rehypothecated¹⁷ and failure to use straight through connectivity between counterparties and third party custodians
- Even though industry workflow tools exist, the market still largely uses email where these tools have not been adopted or in the management and resolution of unstructured process exceptions such as disputes or settlement fails

Although it is required to transfer the undisputed amount of margin, disputes on the remaining part can be protracted and difficult to resolve commercially, leading the parties to simply “agree to disagree” and mark this in their systems.

The diagram and notes below set out in more detail what steps are carried out once a trade has been agreed and what problems arise.

¹⁷ Rehypothecation is where firms can use client collateral for their own purposes.

Collateral ecosystem



Key:

IM	Initial Margin - The purpose of IM is to protect the transacting parties from the potential future exposure that could arise from the future changes in the mark-to-market value of the contract, during the time it takes to close out and replace the position in the event that one or more counterparties default
RQV	Required Value
SSI	Standing Settlement Instruction
VM	Variation Margin - The purpose of VM is to protect the transacting parties from the current exposure that has already been incurred by one of the parties from changes in the mark-to-market value of the contract after the transaction has been executed
1	Review the ISDA MA, CSA and ACA to extract the data needed to assess collateral eligibility and calculate margin. Problems arise here because document negotiation and execution are often done by email. As a result, the CSA details are often incorrect, leading to inaccurate margin calls
2	Set up a client account and settlement instructions. These details can be provided digitally via existing utilities but often they are provided by email which can cause delay as details have to be clarified by email or telephone
3	Reconcile the portfolio. This involves verifying the accuracy of the trade population data by comparing it with the counterparty records. There is often a mismatch which must be resolved by email which can be time consuming
4	Call for the counterparty to post cash or securities to cover any out of the money exposure. Again, any queries at this stage must be dealt with by email which can be time consuming
5	Resolve any disputes. A significant proportion of trades are disputed mainly as a result of differences over valuations. Often these disputes have to be resolved via email which is time consuming and often does not lead to resolution

6	Counterparties exchange assets based on previously agreed margin calls. VM will generally be a cash payment but there is no automated system to enable verification that what was agreed has been paid although platforms offering margin settlement status confirmations to both counterparties are available. At 6A, which relates to IM, a third-party custodian is involved. Currently, these 3rd party custodians are more likely than other market participant to use nonautomated legacy systems to process instructions such as email or even fax when segregated margin - VM or IM, needs to be released back to the pledging counterparty
7	Service the collateral assets including dealing with coupons, interest payments and corporate actions. This process is also manual creating delay and increased costs

6.5.2 Phase 2 - Analysis of existing software solutions

The view of the working group was that, while some current solutions are useful, they are fragmented and lack interoperability. Different utilities and vendors offer services at each of the 7 parts of the life cycle described above. Most importantly, they are not used by sufficient numbers of market participants and in particular, not by the smaller market participants and those in different jurisdictions¹⁸. A sub-group met with some of the biggest existing solution providers¹⁹ to help them analyse what the barriers were to take up of these services and what could be done to improve them and increase their take up. They identified the following as the reasons for the lack of take up:

- High cost barriers can be prohibitive for certain market participants. The group noted that one provider said that they offered differential pricing to encourage smaller participants who would not want to pay for the full service, and another offered a pay-as-you-go service. However, there may also be limited adoption of low cost or no cost options, given the minimal upside and incentivisation for the smaller market participants to adopt them
- Solution conflict - some participants such as collateral managers do not want to use market utilities because they themselves offer a similar service to clients. Fund administrators, collateral managers and software vendors may not be incentivised to simplify the operating model for the market if that simplification reduces commercial advantages. Furthermore, fund administrators and collateral managers are often too disconnected from the actual risks of inadequate collateralisation because of their agency role
- Limited awareness, particularly among smaller clients of the current solutions available
- Lack of data standardisation and interoperability within the industry which means that some of the current services still cannot work efficiently
- Too many service providers providing differing solutions that cover different portions of the process meaning that participants potentially must sign up to many different services and there is a lack of interoperability across different platforms
- Concerns about the security of data on the service platforms. Some institutions are unwilling to share certain proprietary, risk or position data and some have concerns about disintermediation or being traded against. There may also be jurisdictional or regulatory sensitivities about the operational risks involved in sharing data

¹⁸ From discussions with major dealers and buy side firms, it seems that currently, slightly under 50% of margin calls do not use automated utilities and that operations teams spend around 30% of their time dealing with these unautomated trades which are almost exclusively carried out by the smaller market participants.

¹⁹ ISDA, Acadia and TriOptima

- Lack of incentives for smaller market participants to incur the costs and IT upgrades required to join the systems. The group noted a slight increase in the use of automated solutions in the run up to the extension of the Uncleared Margin Rules²⁰ (UMR) to some smaller market participants but they do not anticipate that the continued implementation of UMR will have a sufficient impact on the use of automated systems by the smaller tail end clients

The group identified the following areas where improvements could lead to better solutions and increased take up of existing services:

- Interoperability between vendors. Although there is some evidence of this happening within the industry, such as work with the ISDA CDM, there would be benefits in this going much further. In particular, it would be beneficial if the data held by providers of trade reconciliation and valuation services was available to providers of margin calculation solutions so that market participants did not have to piece together data from multiple providers to try to resolve disputes
- Development of a common and integrated workflow for managing exceptions identified in the different vendor platforms
- Increased data standardisation would improve the efficiency of the current vendor solutions. The main areas the group identified where this might be possible were:
 - (a) trade terminology;
 - (b) the CSA and the ACA;
 - (c) margin calculation models; and
 - (d) communication protocols to encourage use of automated messaging services rather than email and fax

This increased standardisation would also be likely to draw more utility providers into the market, offering similar products. This should lead to lower costs and improved transparency which would help with regulatory monitoring and controls.

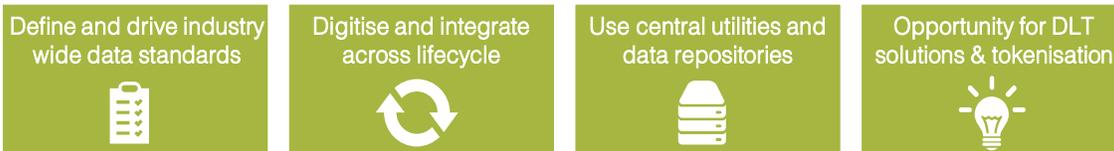
The group noted that the ISDA CDM aims to set an industry-wide standard data model and that there has been a lot of industry engagement with this, focusing on a set of priority use cases, such as standardisation of the data in the CSA. However, the cost of implementing CDM in place of existing data models is often considered significant for large firms so it is only likely to be adopted by new firms or existing firms who are doing a substantial infrastructure upgrade after the development of a fully capable CDM model.

- Education of industry participants to encourage use. The group noted that current information on UMR implementation and suggested operational practices, including the Collateral Management SOP, IM Dispute SOP, and Cash to MMF Reinvestment SOP and another SOP regarding Portfolio Reconciliation and Dispute Management is scheduled to be published by ISDA in 2022.

6.5.3 Phase 3 - A future successful digital solution

The group identified the following areas as overarching themes for a future model:

²⁰ The Uncleared Margin Rules require computation of IM using ISDA SIMM methodology. They have been phased in from 2016 with UMR phase 6 currently due in September 2022.



- **Define and drive industry wide data standards:** Uniformity of data standards across the lifecycle would reduce the need for translation between firms and market utilities and assist with interoperability between systems as new solutions arise
- **Digitise and integrate across lifecycle:** The industry needs to move from legacy paper based, manual processes which are typically functionally siloed, to fully digital processes, integrated across the transactional lifecycle
- **Use central utilities and data repositories:** The replication of data remains one of the fundamental drivers of friction across the collateral management flow. Leveraging central utilities that create a single, authoritative source could offer an alternative and unlock significant efficiency
- **Opportunity for Distributed Ledger Technology (DLT) solutions and tokenisation:** Data standardisation, ongoing digitisation and the concept of single sources of truth could all be extended using DLT. While a standardised DLT model is more likely to emerge in the short term, a truly distributed model, leveraging smart contracts, has the power to disrupt much of the current process. As cash and securities themselves become digitally native through tokenisation, their movement should also become seamless

Using these themes, the group developed ideas for a future model which are set out in section 6.6 below.

6.6 Possible solutions to the problem addressed by the group

6.6.1 In the short to medium term, the following steps would solve some of the problems identified above:

- Industry wide agreement on trade terminology;
- Standardisation of documents used with collateralized products, such as CSAs, ACAs, and other non-ISDA documents such as GMRA or MSLAs;
- Eligible collateral data standards and related processes;
- Industry wide use of agreed automated communication methods²¹;
- Development of best practice guidelines for all market participants;
- Industry wide use of existing automated solutions at all stages of the process including trade reconciliation and margin calculation;
- Increased interoperability and connectivity between existing automated solutions;
- Global convergence on agreed processes and systems

The group noted that ISDA published an Optimal Future State Blueprint in 2017 that aims to tackle some of these issues. Their key recommendations are: digitised ISDA published master agreement and collateral annex documents; central trade valuations; standard collateral eligibility schedules and a centralized interest calculation and matching system. They have also developed a [Collateral Management Transformation Toolkit](#) to help with the process of collateral management transformation.

²¹ ISDA has published the Collateral Management Suggested Operational Practice and the Collateral Management Transformation Toolkit: Collateral Automated Settlement

The group considered whether central clearing of OTC derivatives would be a solution. Their view is that a move towards this might be helpful but would not solve all the problems identified. Instead, they propose the long term future solution set out below.

6.6.2 The long term future solution would be to create one reliable system for the whole process that is used by all market participants. Rather than the current 7 stages of the life cycle, shown in paragraph 6.5.1 above, a future model could reduce to the following 4 stages:



The group considered these stages in more detail below:

1) Agreement Negotiation, Capture and Onboarding

The legal framework governing the process would need to be robust. Key considerations would include:

- Ongoing standardisation of the legal documents that facilitate the collateral management process
- Evolution of legal documents from text based to machine executable code
- A central utility that allows firms to negotiate any new agreements or amendments to existing agreements on a fully digital platform
- Capture of digitally available core operational terms that drive the collateral management process on authoritative repositories, removing data replication and creating a single source of truth
- Electronic onboarding to existing agreements, linked to central Know Your Client repositories, reducing delays and duplication of document production

2) Trade Capture and Lifecycle Management

Trades would need to be consistent between both parties. Key considerations would include:

- Implementation of standardised trade terms
- Creation of a single, common digital representation of derivatives' trade events, actions and processes
- Capture of trades on authoritative repositories, removing data replication and creating a single source of truth (removing the need to reconcile both sides of the trade). Concerns around data sharing will need to be addressed
- A central platform capturing any trade events (such as, upsize, downsize, unwinds, and novations), in addition to providing central processing for payments
- Evolution could see the use of smart contracts on DLT platforms, with self-executable events which would ultimately be synchronised between all parties
- Improvements here could also bring benefits to regulatory reporting processes.

3) Valuation, Calculation and Collateral Management

There would need to be harmonisation of the methodology used to calculate the margin amounts. Key considerations would include:

- Standardisation of calculation methodologies (where possible), such as ISDA SIMM

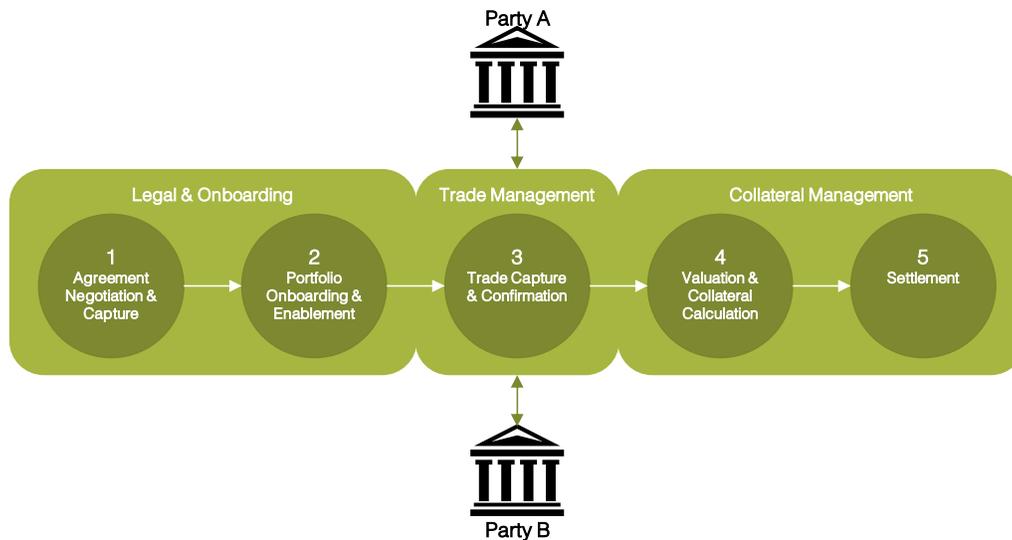
- Implementation of standardised calculation methodologies building on the central utilities and authoritative data discussed in the previous sections to create a single calculation for margin amounts between both parties (removing disputes and the need for reconciliation between different calculations)²². Alternatively, a benchmarking service could be used to help resolve calculation differences
- If there is harmonisation of the margin calculation this should feed through to agreement on the assets to be used as collateral and the “haircut” calculation (the percentage difference between the market value of the asset and the amount that can be used as collateral for a margin) so that agreement of collateral calls should be seamless
- DLT platforms or use of tokenised assets to create a model where the creation and release of collateral can be fully digitised and simultaneous rather than requiring physical settlement

4) Collateral Settlement

There would need to be efficient movement of assets to settle trades. Key considerations would include:

- Building on the central utilities and authoritative data discussed in the previous sections to extend to settlement
- Increased opportunity for netting of cashflows and collateral movements with the use of central utilities
- DLT platforms or use of tokenised assets to allow for frictionless real-time settlement, the removal of market timing constraints on asset mobility and the creation of global interoperability (removing the current need to reconcile, produce custodial release letters, etc.)

Below is a diagram to illustrate how such a future system might work.



6.7 Obstacles to the effectiveness of the solutions identified

6.7.1 Further work would be needed to establish agreement on the best practice guidelines

6.7.2 If systems are to be really useful, they would need to be adopted in other jurisdictions

²² While the introduction of a shared calculation has the potential to radically reduce operational friction, we would assume that both parties would maintain their own internal models. Rather than fully replacing these, we propose a tolerance-based approach where both parties leverage the shared calculation to manage collateralisation but have the right to dispute based on their own internal models.

- 6.7.3 There may be insufficient economic incentives for smaller market participants and those with older legacy systems to join the system if it is not mandated
- 6.7.4 The future project may be technologically challenging at the current time
- 6.7.5 Data concerns may remain an issue

6.8 Any impact on/synergy with other UK public sector initiatives?

The group was not aware of any specific Bank or Regulator initiatives in this space. However, as discussed in paragraph 6.6.1 above, ISDA has been very active in trying to develop best practices and solutions for their members and the group consider that any further work in the areas discussed in the recommendations below should be done in partnership with ISDA to leverage the useful work they have done.

6.9 The working group's final recommendations and suggestions for next steps

As set out in section 6.6 above, there are many actions that could be taken to improve efficiency in this area. In terms of recommendations and next steps however, the working group decided to focus on what might realistically be achieved by industry participants with regulatory support but without regulatory mandates. They identified three areas where improvements could most likely be achieved.

Their recommendation is that the Leadership Group should work on each of the three areas identified below, in partnership with ISDA, to take forward the work that has been done by this working group and try to drive change.

The three areas are:



Engaging with existing vendors to discuss ways to evolve tooling and workflow, to simplify interoperability and convergence between existing utilities and vendor solutions, and to ease adoption for all counterparties.

Considering how to develop, implement and **publish useful industry wide metrics** that could provide visibility as to common issues and pain points and help identify systemic risks and set acceptable benchmarks. These metrics could focus on the percentage of margin calls processed using market utilities, straight through processing rates, average margin dispute rates, average margin settlement fail rates and the overall value of margin collected and posted. The metrics should work for all market participants and should not impose too great a reporting burden or create issues around publication of confidential information or other anti-trust concerns.

Investigating the **creation of a fully digitised system** for the whole transaction lifecycle. This could begin with consulting with vendors on the proposals set out in this document, to analyse their technological and financial viability. Ultimately, any solution would need to be adopted internationally to fully effect change. Priority focus could be on settlement through tokenisation or digitisation.

7 Client Onboarding Working Group

This section sets out the detail of the work and findings of the Client Onboarding (CO) Working Group.

7.1 Key Themes

The key themes that came out of the work done in this area were:

- **Standardise** document requirements for different client types at least to a set of “core documents” that are likely to be required by most firms
- **Clarify** into a glossary or dictionary type document what data points are acceptable as proof of regulatory requirements
- **Digitise** access to documents onto one platform so that they can be accessed quickly, securely and cost effectively and the relevant information extracted easily
- **Interoperability** - provision and receipt of the information needs to be possible and seamless from different IT systems at different firms, without duplication or overlap
- **Mutual reliance** - all those using the platform need to be entitled to rely on the accuracy of the data and documents available there. There would need to be a system in place to ensure that all documents were refreshed in an agreed timeframe so that participants could rely on the information being sufficiently up to date
- **Liaison with other jurisdictions** to extend the digital platform outside the UK, if successful

7.2 The CO working group

The group that looked at this issue was made up of experts from buy and sell side participants and service utilities who have considerable experience in this area.

The group was chaired by Siobhan Clarke, Head of International Operations at M&G Investment Management Ltd.

The remainder of the group was made up of senior experienced decision makers from Bank of America, Barclays, BlackRock, Credit Suisse, DTTC, Euroclear, Goldman Sachs, J.P. Morgan, LCH Swap Agent, M&G Investments, Morgan Stanley, State Street and XTC Markets. The Bank of England and the FCA joined the working group meetings as observers. Full detail of the participants is set out in Appendix F.

7.3 The problem addressed by the working group

Legal requirements stemming from regulation introduced to combat money laundering²³ require financial services firms to meet “Know Your Client” (KYC) criteria. This process broadly consists of two parts. The first is requesting a prospective client to provide certain documentation and evidence that the service providing firm deems relevant and necessary to enable them to conduct the second part which is analysis and review of the client to ensure that they fully understand the firm and its objectives. The review process cannot be delegated but it should be possible to make the collection of documents and evidence significantly more efficient and less risky.

The requirements to conduct a KYC profile are not standardised and require firms to adopt a “risk-based approach”. Firms throughout the industry have adopted similar but varying requirements for different categories of client and as a result buy side clients and counterparties now often must produce multiple documents, repeatedly, to different financial service providers in order to conduct business. This has contributed to the process to onboard new clients being slow, costly and inefficient. The current situation is not in the best interests of clients. It can take multiple months to setup client accounts, during which time, the prospective client is unable to invest with the proposed service provider and is potentially missing out on investment opportunities.

Service providers have trialled solutions including provision of a complete outsourced KYC function and data and document repositories for commonly required documents. However, none of these solutions have received enough take up to resolve the problem.

The objective of this working group was to identify improvements to the CO process that would increase efficiency, ease of trading, competition and operational resilience, and decrease costs, without detracting from the responsibility to assist in the detection of money laundering.

7.4 The steps taken by the working group

- Phase 1:** Creation of a subgroup which **compared the onboarding requirements** for UK corporate and institutional clients of all the entities represented in the working group. The aim was to see if it was possible to build a comprehensive common data set
- Phase 2:** Consideration of **existing software solutions**. The group spoke to representatives from 2 vendor firms²⁴ to discuss why their products have not been more widely taken up and what lessons they have learned from their experience in the market
- Phase 3:** Consideration of what a **future successful digital solution** would need to look like
- Phase 4:** Discussion of the findings from Phases 1, 2, and 3 and **agreement on a set of conclusions and recommendations**. See section 7.9 below for the outcome of these discussions

²³ The Proceeds of Crime Act 2002, The Terrorism Act 2000, The Anti-Terrorism, Crime and Security Act 2001, The Terrorism Act 2006, Terrorism Act 2000 and Proceeds of Crime Act 2002 (amendment) Regulations 2007, Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer Regulations) 2017, The Sanctions and Anti Money-Laundering Act 2018, The Money Laundering and Terrorist Financing Regulations 2019, Money Laundering and Transfer of Funds (Information) (Amendment) (EU Exit) Regulations 2019.

²⁴ Refinitiv and Fenergo

7.5 The findings of the working group

7.5.1 Phase 1 - Comparison of onboarding requirements

The sub-group looked at the KYC documentary requirements, in the UK only, of all the participant firms in the full working group, to onboard 10 different types of institutional client namely: Pension Plans, Government and State Agencies, Charities, Funds, Publicly Traded Companies, Privately Held Companies, Financial Institutions, Trusts, Partnerships, and Associations and Cooperatives²⁵. They then prepared an inclusive list of all documents required by any of the institutions. This list contained a total of 113 different individual documentary and data requirements. They identified 34 documents that were common to most client types with all the remaining being specific to a particular client type. Preparing this list required some work on agreeing data definitions and document naming conventions as this was not consistent among the different firms. The full list can be found at Appendix G.

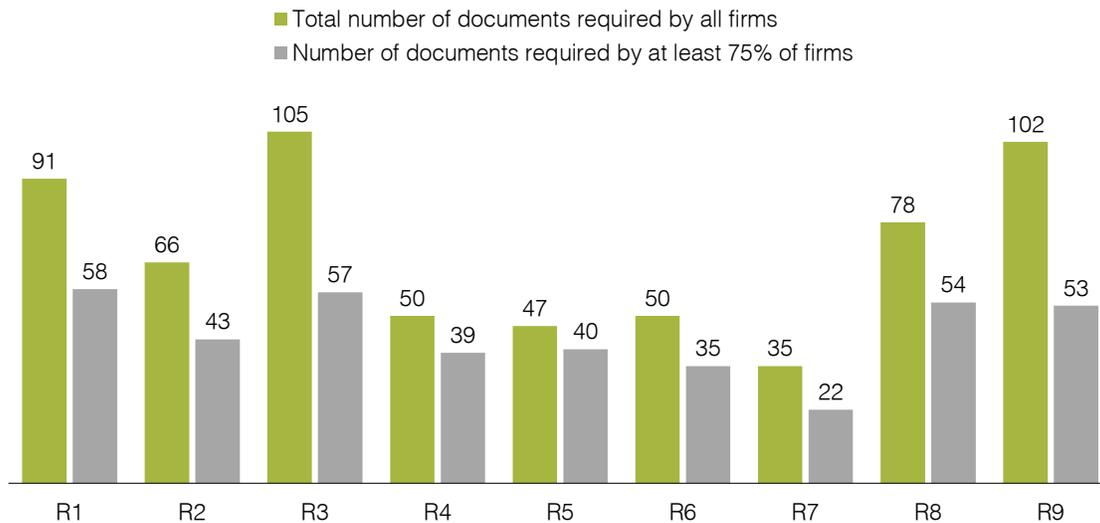
To try to establish a set of “core documents” that were most commonly required, they then prepared a list of only those documents that were required by 75% or more of the participant firms. This resulted in a list containing 60 documents, 21 of which were common to most client types with the remainder being specific to a particular client type. They also analysed these documents to see if there were differences between those required by Banks and those required by Asset Managers. This analysis identified a divergence between the 2 business models with 24 of the 60 documents being required only by Banks and 4 being required only by Asset Managers with the remainder being common to both. The full list can be found at Appendix H.

The chart below shows graphically the differing requirements of different market participants. For each of the 9 participants (R1 to R9) the first bar shows how many documents in total they required for all client types and the second bar shows how many documents they required that were common to at least 75% of all the participants. This shows clearly both.

- (a) the large quantity of document requirements and the diversity of requirements among different market participants and
- (b) why standardisation of the requirements and digital access to those agreed documents could have a very significant impact on reducing the cost and time of onboarding new clients

²⁵ In order to make the task manageable, the working group agreed to focus at this point only on institutional clients and not retail clients and only on KYC onboarding requirements and not general operational onboarding requirements.

Total number of documents required vs. total number required that were common to 75% or more



7.5.2 Phase 2 - Analysis of existing software solutions

Most existing vendors have offered a service providing the whole of the KYC function rather than just hosting and storing key documents. The problems they have faced with this service are:

- firms cannot delegate their regulatory responsibility for KYC so are reluctant to outsource this function as they would still need to do considerable work to fulfil their regulatory duty;
- products would have to be tailored very specifically to each client firm because they all have unique legal entity structures and different regulatory needs and risk appetites. This makes it difficult for vendors to produce a cost-effective offering that they can sell to multiple clients;
- some market participants view CO as a competitive advantage over other firms if they can provide a faster service and so they have not been interested in vendor products or a collective industry solution that levels the playing field; and
- it has been difficult to establish a commercially viable pricing and risk model that works for the vendor and the client firms

Some vendors have provided solutions that are data and document repositories that participants can access to fulfil their KYC requirements. These have had some success, but they have not been widely used within the industry. There have been two key problems with these solutions. The first is that they are not easily accessible by different IT operating systems which makes the integration benefits challenging from a technology and cost perspective, given that a significant amount of the documents are in any event publicly available. The second is that the providers cannot accept responsibility for the accuracy of the documents which makes them of limited use to a firm which has a regulatory obligation to ensure that the data it collects and uses is accurate. Unless such solutions can attain a critical mass within the industry and it is accepted that the documents within them can be relied on by firms, then they will always be of limited value.

7.5.3 Phase 3 - A future successful digital solution

The working group agreed that the optimal solution would be a centralised KYC passporting platform that could store the core documents most commonly required by firms and which could then be accessed by all market participants when granted permission by their clients. This should help speed up the process of CO while still giving individual firms flexibility to apply their own additional onboarding requirements and risk appetites and so meet their regulatory requirements. This proposal and the obstacles to its implementation are discussed further below.

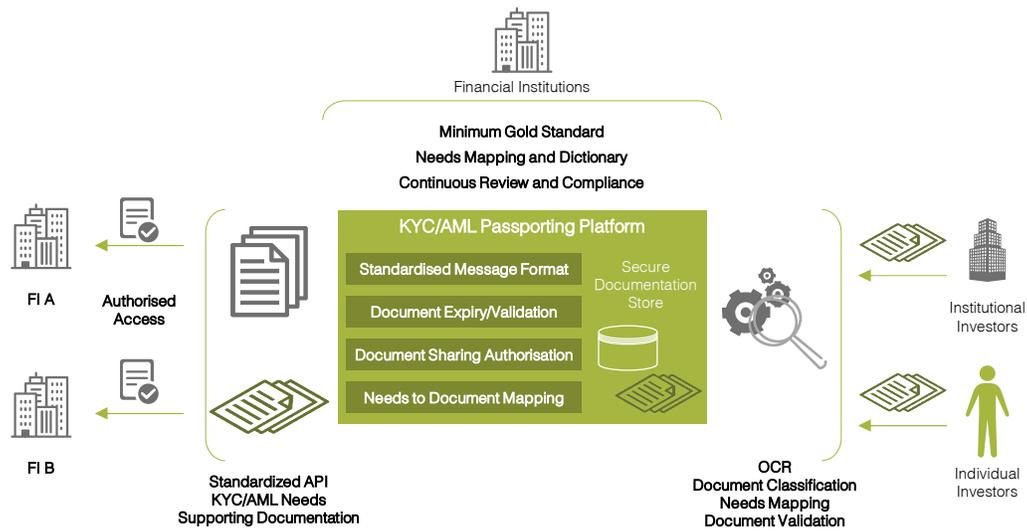
7.6 Possible solutions to the problem addressed by the group

- 7.6.1 Get industry agreement on a set of “**core documents**” that would form the foundation for KYC requirements. This would need to include agreement on **naming conventions** for each requirement to aid standardisation; agreement on the **precise form** of those documents that would be acceptable (e.g. whether photograph/certified copy/notarised copy etc.); and agreement on how those documents fulfil and **map to the regulatory requirements** perhaps in the form of a data glossary or dictionary. A standard will also need to be set for how long documents remain valid. In some circumstances currently, documents need to be less than 3 months old which makes the process of maintaining valid documents extremely onerous.
- 7.6.2 Create a **KYC passporting platform** that is accessible by all market participants where buy side participants could upload documents and authorise their use by any number of other sell side market participants. Technically, this could be either a web-based portal where a market participant could view and download the documents they need or possibly an Application Programming Interface that would allow documents to be retrieved and included into the participant's own IT systems

For this to work there would need to be:

- common standards agreed as discussed in 7.6.1 above;
- Optical Character Recognition so that data could be extracted from documents like pictures of passports;
- mapping to show what specific data in the documents is relevant to the legal KYC requirements;
- an agreed recertification process that would define time periods by which up to date documents would need to be uploaded;
- timely notifications when the validity of a document is about to expire and when a new document has been uploaded;
- ongoing and proactive review and dissemination of new regulations and guidance to ensure that the document requirements remained up to date;
- guarantee of security of the platform given the confidentiality of the documents that will be stored
- a service model to support the above activities and assist in operations like data quality assurance

Below is a diagram showing how this might work.



Most importantly, for the system to work, it would be critical that there was only one platform or that it operated like one platform even if there were multiple platforms involved and that there was wide market participation in it.

In addition, while this proposed system would be useful if adopted in the UK, its utility would be significantly greater if it could be adopted in multiple jurisdictions, so the working group recommend discussion with regulators in other jurisdictions, to adopt a similar strategy.

The working group focussed on the CO stage of the KYC process, but they consider that it could potentially be used to centralise and standardise some of the ongoing KYC compliance requirements after onboarding such as meeting ongoing compliance requirements and dealing with requirements following mergers and other corporate actions.

The benefits of such a platform would be that:

- there would be greater standardisation of documents and data needed to complete KYC for different client types which would help speed up the process of onboarding and make it less inconsistent and complex for institutions and clients;
- it would provide an authoritative and centralised “Golden Source” of KYC core documents that is easily and quickly accessed by market participants;
- there would be a proactive documentation validation and recertification process reducing the need for financial institutions to manage this individually; and
- sell side participants would remain obliged to apply their own standards and risk appetites to the clients they deal with, enabling them properly to fulfil their regulatory obligations concerning KYC in their unique business environment

7.7 Obstacles to the effectiveness of the solutions identified

7.7.1 Further work would be needed to establish agreement on the core set of documents and their form

7.7.2 If the system were to be adopted in other jurisdictions, then work would be needed to address differing local regulatory requirements

- 7.7.3 The passporting platform would be expensive to set up and maintain so consideration would need to be given as to how to fund the cost of both setting it up and running it and a cost-benefit analysis conducted
- 7.7.4 Maintaining the security of the system might be difficult and costly
- 7.7.5 There may be insufficient economic incentives for smaller market participants and those with older legacy systems to join the system if it is not mandated. Obtaining critical mass, if not the entire industry, is key to success
- 7.7.6 The firm which has the first contact with the client will have to conduct the most work and that work will benefit others, unless there was a mechanism for the platform itself to do the initial checks. It is therefore possible that larger firms will find themselves doing most of the initial work enabling smaller firms to benefit with less cost
- 7.7.7 There might be commercial issues for those vendors who currently provide a KYC service that is relatively widely used
- 7.7.8 Without government or regulator endorsement of the document standards used by the platform or a system in place, such as pooled audits, to enable participants to rely on documents obtained from the platform as part of their regulatory KYC due diligence process, there might be insufficient benefit in using the platform

7.8 Any impact on/synergy with other UK public sector initiatives?

- 7.8.1 Representatives of the group met with representatives at the Department for Digital, Culture, Media & Sport (**DCMS**) to discuss their ongoing work on creating digital identities for individuals. DCMS have an open consultation, currently seeking views on:
 - a governance system to oversee digital identity and make sure organisations comply with the rules;
 - how to allow trusted organisations to make digital checks against authoritative government-held data; and
 - establishing the legal validity of digital identities, so that people are confident they are as good as physical documents like passports or bank statements

Proving identity digitally rather than with physical documents would contribute to speeding up the initial phase of CO for UK individuals and for checks on UK individuals that take place when onboarding organisations (for example checks on corporate directors or partners in partnerships). The principles of the approach could also be extended to digital identities for organisations, (which form the vast majority of clients in the financial sector). We understand that work on digital identities for organisations was begun by a group within the Department for Business, Energy and Industrial Strategy (**BEIS**) but that work is not currently ongoing. The breadth of the output from DCMS on this issue, which has included significant and lengthy consultations and is still ongoing, emphasises the amount of work that would be involved in digitising the whole CO process.

It was also interesting to note that the current plan²⁶ envisages significant public sector involvement to ensure that the system can be trusted and relied upon by users. For example, the current proposals include that the system will be overseen by a governing body chosen by the UK government; there will be government approved rules for certification of firms providing the service; there will be a UK Accreditation Service (UKAS) to accredit certification bodies; and they will introduce a statutory presumption that affirms that digital identities are as valid as physical ones.

²⁶ [UK digital identity and attributes trust framework - alpha version 2 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/uk-digital-identity-and-attributes-trust-framework-alpha-version-2)

7.8.2 The group also noted the Bank of England’s involvement in promoting open-source data for Small and Medium Enterprise finance. This work too highlighted the problem that CO can take up to 6 weeks and that many SMEs choose not to borrow at all because of this, reducing the demand for credit and leading to allocative inefficiencies in the market. They proposed a “portable credit file” which would enable SMEs to share data with different banks to find the best available finance. This has similarities to this group’s proposals in that it would allow SMEs to share their financial data across credit providers in a way that could be relied upon.²⁷

7.9 The working group’s final recommendations and next steps

The objective of the working group was to identify improvements to the CO process with a particular focus on technology. The group analysed existing software solutions to consider why they have not been more widely used and have set out in this paper a vision for what a future successful technological solution would look like. Below are the 4 steps that the group consider would be necessary to take this solution forward.

- 01** Establish **standardised document requirements** and data definitions and agreed mapping of data to KYC regulatory requirements for all client types. Standards need to be issued on the precise form of documents that would be acceptable and a longer expiry time for documents should also be recommended.
- 02** Initiate detailed discussions with vendors to encourage adoption of standards as set out in recommendation 1 and explore the ability to **make existing platforms much more interoperable** using standardised APIs.
- 03** Alternatively, discuss with vendors the option of creating a **single passporting platform**, accessible to all participants via an API or a web portal. This option would require further work to consider its costs and commerciality.
- 04** As shown by the work of the DCMS, it is likely that government departments will also have a role to play to facilitate change. In this regard, the group would welcome the opportunity to **liaise with BEIS when it is ready to recommence its work on digital identities for organisations** and further explore of how Legal Entity Identifiers could be used in any such identities.

Taking forward these recommendations is a significant undertaking that would require funding and considerable time commitment from those working on it. Industry, vendors and the public sector will need to work together to make any meaningful progress.

Our proposal therefore is that the next step, following publication of this report, is for there to be a round table discussion of these recommendations, sponsored by the Leadership Group and attended by representatives of the member firms of the Task Force, with an open invitation to other interested industry participants and vendors of solutions in this space. We hope that this will help to generate further ideas as to how all these parties can work together to make progress in this area.

²⁷ [Open data for SME finance: what we proposed and what we have learnt | Bank of England](#)

8 Membership of the Post-Trade Task Force

David Hudson (Chair)	J.P. Morgan
Sanjay Dhir (Secretariat)	J.P. Morgan
Chris Bush	Bank of America
Gerson Riddy	Barclays
Robert Lamb	BlackRock
Jeremy Lewis	Credit Suisse
Andrew Douglas	DTCC
Gareth Jones	Euroclear
Risa Lederhandler	Goldman Sachs
Philip Glackin	J.P. Morgan
Marcus Robinson	LCH
Siobhan Clarke	M&G
Merav Pepere	Morgan Stanley
Sigal Zarmi (until June 2021)	Morgan Stanley
Akbar Sheriff (until August 2021)	State Street
Michael Irwin	XTX Markets

Observers:

Ben Bowry	Bank of England
James Tulloch	Bank of England
William Rawstorne	Bank of England
Carmel Deenmamode	FCA
Michael Kent	Linklaters
Anabel Thomson	Re:link

9 Appendices

Appendix A

Members of Non-Economic Trade Data Working Group

Name	Company
Robert Lamb (Chair)	BlackRock
Ify Ezike (Secretariat to working group)	BlackRock
Chris Bush	Bank of America
Adrian Chamberlain	Bank of America
Ross Dilworth	Barclays
Anthony Swift	BlackRock
Katherine Bates	Credit Suisse
Andrew Douglas	DTCC
Ian Dowglass	Euroclear
Ffion Acland	Goldman Sachs
Gary Chan	J.P. Morgan
Jonathan Armitage	LCH
Sven Werner	State Street
Mike Williamson	XTX Markets

Observers

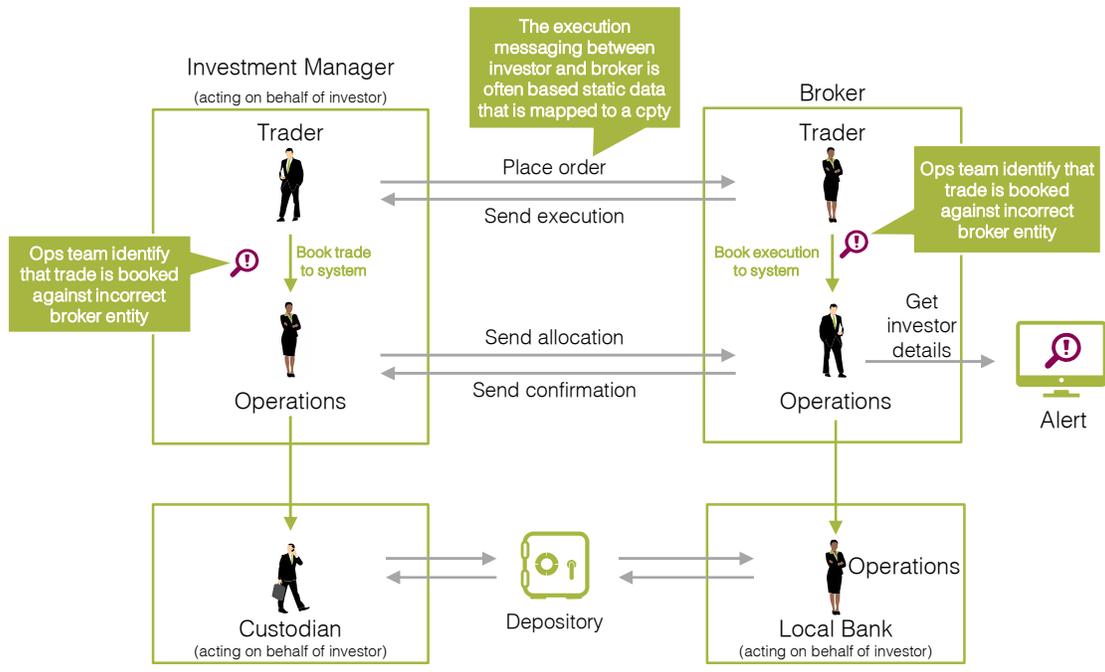
James Tulloch	Bank of England
Benjamin Bowry	Bank of England

Appendix B

Explanation of where problems occur when LEIs are not used early enough in the trading workflow

1. **Allocation Process** - If the buy-side institution has booked the trades to the wrong counterparty, then the allocations will likely be sent to the wrong counterparty. If the sell-side institution has booked the trades to the wrong investment manager then the sell-side firm will be unable to complete the allocation process in a timely manner as the investment manager's legal entity will not match with the legal entity on the allocations received
2. **Account Opening** - When the broker receives the allocations from the investment manager, they will reconcile the executions with the allocations and book the allocations to the respective investor accounts that they have set-up in their systems. If the allocations do not include an unambiguous investor identifier, then problems arise in either setting up an account (if is a new client for the broker) or assigning the allocation to an existing account
3. **Confirmation Process** - After allocation, the broker and investment manager conduct a confirmation process to ensure the transaction details are accurate and agreed. Any inaccuracy in the entity information can cause further exceptions at this point
4. **Regulatory Reporting** - Regulatory reporting needs to be conducted promptly after execution and confirmation. Counterparty information is often both a driver of who is responsible for reporting and a mandatory field for reporting. Therefore, any ambiguity or inaccuracy in the counterparty identification can lead to delayed or inaccurate reporting
5. **Settlement Instructions** - Most market participants create a link in their systems between settlement instructions and the counterparty. Investment managers will link settlement instructions to broker entities and brokers will link settlement instructions to investor entities. Inaccuracy or ambiguity in these identities can flow through therefore to exceptions and failures at the settlement stage

At a high level the current state between investor and broker is presented below. The simplicity of this workflow hides the complexity that occurs during and after execution. The maroon magnifying glass highlights where the issue materialises as problems are discovered by the operations teams on both sides when it becomes apparent that the trade has been booked to the incorrect entity.

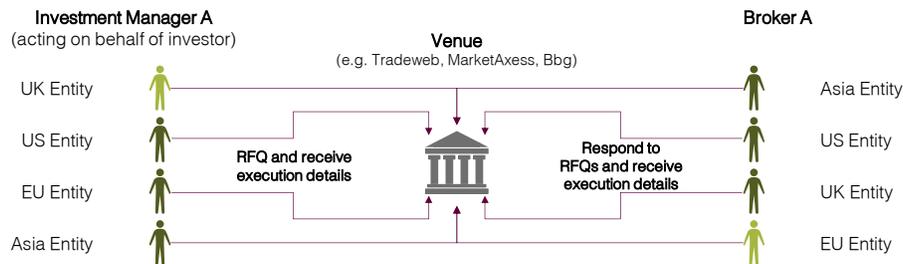


Appendix C

Problem scenarios arising out of inadequate client identification, considered by the Non-Economic Trade Data Working Group

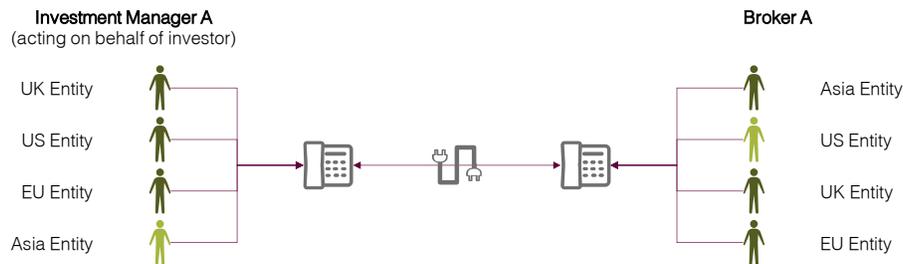
Client identification problems arise where there is uncertainty or ambiguity or multiple options during execution. Set out below are two examples of scenarios that create ambiguity and therefore lead to incorrect trade bookings and discrepancies during the post execution workflow which then need to be resolved manually. Example 3 is then a deeper look into problems that arise at the point of allocation.

Example 1 - Trading via a Venue



Trading venues help sellers and buyers come together but inserting an intermediary between the two parties can create ambiguity particularly if the institutions themselves are multi-entity global institutions. In the example above, there are multiple legal entities for the same global institution on both sides of the transaction. During execution it can be difficult to know which institution is trading with which institution resulting in incorrect trade booking. The messaging that is passed via the venue contains “keys” that are used to identify participants but the keys are sometimes not granular enough and the use of a static key requires both sides to maintain static data tables to translate “keys” to counterparties in their respective systems resulting in human error from time to time. This situation could be resolved if all parties were required to supply their LEI and the venue was required to pass through the LEI, removing the need for static data keys.

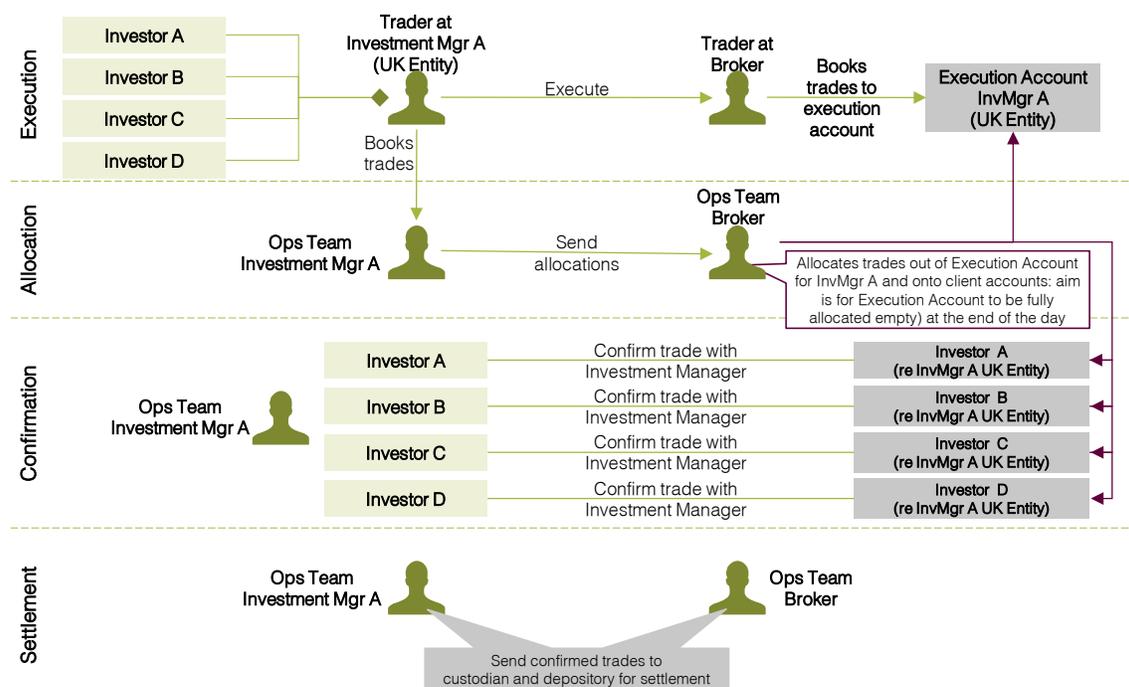
Example 2 - Electronic Connectivity



The relationship between trading parties can be complex, particularly the large global institutions that trade with each other all over the world. These institutions often trade with each other electronically requiring secure, stable and robust infrastructure. To simplify and create a more efficient connection this infrastructure can sometimes be consolidated into 1 or 2 connections, as shown in the diagram above. This has significant benefits from an infrastructure perspective but can create ambiguity at an entity level as all parties are sharing the same incoming line. To try to solve this problem, each message contains a “key” to represent who it is from. This key then needs to be translated via a static mapping table on each side of the transaction creating the risk of human error and ambiguity as to who is trading who.

Example 3 - A Deeper Dive into the Challenges Faced by the Broker During the Allocation Process

In most instances, at the point of execution, the broker is trading with the investment manager unaware of who the underlying investor(s) are. Once execution is complete, the investment manager provides details of how to “allocate” the execution across the different investors. At this point the broker will book the trades to each investor’s account in order to complete the confirmation process prior to sending the trades to their agent / depository for settlement. The investor account is in turn linked with the investment manager that originally placed the order with the broker. This is illustrated in the diagram below.



Sometimes, Investment Manager A might be trading on behalf of Investor M from multiple legal entities. This would then require Broker X to set-up a new account for Investor M to reflect each entity of Investment Manager A. For instance, Broker X might end up with multiple accounts along the following lines:

- Investor M (re Investment Manager A EU Entity)
- Investor M (re Investment Manager A UK Entity)

- Investor M (re Investment Manager A Japan Entity)
- Investor M (re Investment Manager A US Entity)

The underlying investor is the same in each instance but in order to maintain the integrity of the relationship multiple accounts are required.

When providing the allocations, it is therefore critical for the investment manager to provide unambiguous data to clearly define:

1. An identifier for the investment manager. Knowing which investment manager entity these allocations relate to helps the broker match the allocation with the execution and ensures that the allocations are booked to the correct account, reducing downstream exceptions
2. An identifier for the investor. Knowing which investor the allocation relates to, helps the broker allocate the trade to the correct account, again reducing downstream exceptions

An LEI would solve both of these questions.

It is also very possible, and highly likely, that an investor might be using multiple investment managers and that those investment managers might also execute with the same brokers so a broker could end up with 10s of accounts set-up, all for the same underlying investor, but split across multiple investment managers and their legal entities. An LEI for the investor would help to connect these accounts and improve the overall infrastructure.

Appendix D

Problem scenarios arising out of inadequate settlement instructions, considered by the Non-Economic Trade Data Working Group

Below are 6 example scenarios to illustrate the wide variety of problems that arise from inadequate settlement instructions.

1) Investment Manager changes to SSIs

The SSIs for the end investor (where the end investor has appointed an investment manager as their agent to execute transactions and support settlement) are typically managed by a global custodian with the help an internal static data team and published on industry platforms for the broker to access and use.

These SSIs can change on a regular basis depending on changes in the global custodian's sub agent or account details in a specific market for the fund. These changes are made on an industry platform.

Brokers needs to ensure their internal systems are refreshed with these SSI changes. If they fail to do this in a timely manner, it can lead to the failure of trades due to mismatch of SSIs, and then requires manual follow up with brokers to ensure they have refreshed their systems with SSI changes.

2) Broker changes to SSIs

The reverse of scenario 1 is also true. The broker provides their SSIs to the Investment Manager. The investment manager typically stores and maintains the brokers' SSIs in their internal system ready for communication to the custodian as part of the trade instruction.

Brokers need to communicate any changes to their SSIs in market/product to the Investment Manager - usually an email with updated SSI (in a secure pdf) to the Investment Manager's static data team. This process is manually intensive - the Investment Manager's static data team have to update the SSI in their system, with 4-eye checks and a review process in place to ensure the correct SSIs are set-up. Failure to do this will lead to a mismatch which will need to be resolved during the pre-matching/settlement process.

3) Execution prior to validation of SSIs at onboarding

Delays during onboarding can result in a trade executing before SSIs have been validated. This creates an additional operational burden and can result in trade failure.

4) Changes in custodian

If an investor changes custodian, this results in a transfer of the investor's portfolio between depositories or depository accounts and a resulting change in all the SSIs relating to that investor. That single investor may have multiple investment managers who in turn have multiple brokers and therefore a single change in custodian by one investor can result in hundreds of SSI changes across 10s of brokers.

This change is usually broadcast by the investment manager(s) to all of their executing brokers via an email explaining the change and when the new SSIs become effective, with the new SSIs usually distributed via an excel sheet. Due to the sheer volume of changes the brokers need to make in their systems, it requires a mini project that co-ordinates multiple teams in multiple time zones across all the brokers impacted.

The new SSIs tend to go live on a Monday, which means the broker's US team tends to start the changes at close of business US time, they hand over to Asia to carry on the updates and then it goes back to London.

Other solutions are using an off-shore team to perform the amendments over the weekend. This can cause an issue if the off-shore team have a question that needs answering, but no-one is available over the weekend to help.

5) Market participants not registering their SSIs with a central repository.

Not all market participants leverage the industry utilities available and will instead store and distribute their SSIs via e-mails with PDF and excel attachments to be updated manually within individual firm's repositories. This makes the process very repetitive and error prone with means changes are very likely to be missed.

6) Counterparties may have more than one SSI in a particular market

There are many instances where a counterparty may have multiple SSIs for the same market. For instance, a broker may wish to segregate its programme trading settlement from its ETF primary market activity and therefore may have two accounts at the depository. Or a single investor may have multiple custodians or multiple investment managers resulting in multiple accounts at a single depository. In such scenarios, it can be difficult to systemically capture SSI details as a part of the trade. Effectively it is shared manually, often on or after settlement date.

Appendix E

Members of the Uncleared Margin Working Group

Name	Company
Sigal Zarmi (Chair until June 2021)	Morgan Stanley
Philip Glackin (Chair from June 2021)	J.P. Morgan
Clair Grayston (Secretariat to working group)	Morgan Stanley
Mick Dempsey	Bank of America
Nick Steel	Barclays
Tony Ashraf	BlackRock
Thomas Hall	Credit Suisse
Duncan Scott	DTCC
Gareth Jones	Euroclear
Ravikiran Buddhavarapu	Goldman Sachs
Karthik Harinathan	J.P. Morgan
Nate Ondyak	LCH
Marco Ricci	M&G Investments
James Waters	Morgan Stanley
Laura Hill	Morgan Stanley
Ozgur Ozel	Morgan Stanley
Inga Bogutska	Morgan Stanley
Wayne Forsyth	State Street
Michael Irwin	XTX Markets
Observers	
James Tulloch	Bank of England
Benjamin Bowry	Bank of England
Chris Ford	Bank of England
Legal Adviser	
Michael Kent	Linklaters

Appendix F

Members of Client Onboarding Working Group

Name	Company
Siobhan Clarke (Chair)	M&G Investments
Aamanveer Binning (Secretariat to working group)	M&G Investments
Katharine Nowitz	Bank of America
Matthew Bizup	Barclays
Alasdair Riach	BlackRock
Kristian Glynn	Credit Suisse
Luca Cappelletti	DTCC
Miglana Lazarova	DTCC
Deep Purkayastha	Goldman Sachs
Elizabeth Lavelle	J.P. Morgan
Anthony Thomas	LCH
Jill Neilan	M&G Investments
Aleksandar Hadzic	Morgan Stanley
Coralie Pommel	State Street
Emma Whitty	State Street
Bernie Denis	XTX Markets
Observers	
James Tulloch	Bank of England
Benjamin Bowry	Bank of England
Carmel Deenmamode	FCA

Appendix G

List of all documents required for onboarding of non-retail clients by the 9 participants in the Client Onboarding working group

All Client Types (34)

Legal name of the entity

Country of incorporation

Legal registered address

Physical business / registered where applicable

Evidence of formation / legal existence

Evidence or Certificate of Authority / Establishment Agreement

Date of establishment and country of formation, incorporation or registration

Registration number or tax identification number issued by the government or authorised body

Industry type and nature of business

Authorized Signatory List (ASL)

Address of authorized individuals

Authority verification for individuals signing the agreement

Authority verification for individuals executing the ASL, Certificate of Incumbency, Board Resolution, etc.

Identify and verify controlling parties (including senior management)

Identify and verify authorised signatories

Identify and verify any agent opening the account

Ultimate Beneficial Owner (UBO) controlling party form

Identify individual signed UBO controlling party form

Identify and verify UBO (natural persons)

Certified identification copies for all UBOs

Certified identification copies of controlling parties

In case no UBO is identified, identification verification must be obtained for the most senior controller

Regulatory / listing status if applicable for fund and fund manager

Evidence of regulatory standing and registered status

Name of regulator (where relevant)

Sanctions questionnaire

Country of contributions (Office locations in High Risk or Sanctioned or Unrated countries)

Primary purpose of the account

Initial funding amount

Type of funds

Anticipated transaction activity

Source of Funds - identify / verify

Source of Wealth - identify / verify

If any individuals have been verified, identification form with consent disclosure is required

Pension Plans (0)

No additional requirements

Government & State Agencies (6)

Obtain original signed or certified formation documents

Evidence that a Sovereign Wealth Fund (SWF) applies the Santiago Principles

Identify any individuals / enterprises that may hold over 25% or 10% voting rights in the entity (if applicable)

Anti Money Laundering (AML) Programme

Geographies of where the Supra-National Organisation (SNO) provides services, relief, development or support

Obtain understanding of how the SNO is funded and operated (how funding is disbursed)

Charities (9)

Certified copies of legal formation documents including bylaws

Nature and purpose of the charity and information on objectives

Name of the founder or settlor depending on the type of entity

Identify large (substantial) contributors

Confirmation that no particular individual benefits from the charity (where individual charity not allowed)

Countries where the entity operates or finances projects

Proof of tax-exempt status

Understanding of how the legal entity is funded and how funding is disbursed

Evidence of affiliations legal entity has with Non-Government Organisations, Government organisations, groups and charities (where applicable)

Funds (10)

Formation documents / prospectus

Certified copies of legal formation documents

Limited Partnership Agreement (for Hedge funds / Private Equity funds)

Identify all layers of ownership direct/ indirect 25% for low / medium due diligence 10% for enhanced due diligence (where applicable)

Verify all layers of ownership direct/ indirect 25% for low / medium due diligence 10% for enhanced due diligence (where applicable)

Name of exchange (if listed)

Obtain redemption cycle (Hedge fund / Private Equity funds)

Due Diligence questionnaire (Wolfsberg Principles) where applicable

If fund is operated or advised by a registered Investment Manager/Agent obtain a current AML programme

Evidence the investment vehicle has systems and controls in place to conduct customer due diligence on their investors

Publicly Traded Companies (8)

Obtain signed or certified formation documents

Name of listed parent and confirmation of ownership by the listed parent

Identify country of incorporation of parent entity

Name of exchange and confirmation of exchange listing

Name of exchange parent is listed on and confirmation of the parent's listed status

Identify all layers of ownership direct/ indirect 25% for low / medium due diligence 10% for enhanced due diligence (where applicable)

Identify and verify the names of all beneficial owners with 10% and above shares or voting rights

Obtain a document to verify the customer's legitimate business operation and record license information (where applicable)

Privately Held Companies (6)

Certified original or signed legal formation documents

Evidence that this is not a bearer shares entity / bearer share declaration form

Names of individuals who control 25% or over of its capital or profit, or of its voting rights for operating companies

For operating entities, identification of all beneficial owners (enterprises and verification of individuals who own or control 25% or over (low / medium due diligence) formation documents / share registers of all beneficial ownership direct / indirect layers (enterprises)

For operating entities, identification of all beneficial owners (enterprises and verification of individuals who own or control 10% or over (low/ medium due diligence) formation documents/ share registers of all beneficial ownership direct/indirect layers (enterprises)

Declaration of identity of Institutional tax residents

Financial Institutions (17)

Certified original or signed legal formation documents

Evidence that this is not a bearer shares entity/ bearer share declaration form

Commercial license / Bank license

Confirm listing (if applicable)

Name of exchange (if listed)

Name of home country central bank or relevant supervisory body/regulator (regulated status and licence)

Confirm ownership by the regulated parent / name of regulated parent

Confirm the parent firm's regulated status and name of regulator if applicable

Confirm (where regulated) that AML processes of the parent are being applied to the subsidiary

Formation documents / share registers of all beneficial ownership direct / indirect layers (enterprises)

Names of all 10% UBOs

Identification and verification of UBOs and proof of address

Due diligence questionnaire (Wolfsberg principles)

Identification and verification of any agent opening the account

AML Programme

USA Patriot Act Foreign Bank Certification

Declaration of identity of institutional tax residents

Trusts (15)

Certified or signed original formation documents / Trust deed

Nature, purpose and objects of the trust (e.g., discretionary, testamentary, bare)

Confirm structure of trust (if involving several layers of ownership) and rationale for this structure

Name of the founder or settlor depending on the type of entity

Names of all individuals who are beneficiaries with 25% or over interest in the trust

Corporate Trustee: names and address of all trustees

Corporate Trustee: proof of regulated status, if corporate trustee

Individual Trustee: name and residential address

Certified identification copies of trustees (controllers)

Source of funds in the Trust (i.e. source of wealth of settlor)

Verification of the source of assets under management (where distinct from source of wealth of the settlor) and the source of wealth of the settlor

Verification and identification copies of all settlers, beneficiaries and trustees / UBO controlling party form (US contracted customers)

In case no UBO is identified, identification verification must be obtained for the most senior controller

Obtain a document to verify the customer's legitimate business operation and record license information

UBO source of wealth verification

Partnerships (4)

Names of Partners/Principals owning 25% and above of voting rights

Verify the identity of all authorized signatories

Verification of source of funds from custodian

Partnership agreement

Associations & Cooperatives (4)

Names of management committee members

Names of members

Names of members that have 25% and above of shares or voting rights

Names of members that have 10% and above of shares or voting rights

Appendix H

Documents required by at least 75% of the 9 participant firms in the working group. Additional column to show whether the document was required by just banks, just assets managers or both

Both Client Types (21)	Organisation Type
Legal name of the entity	Both
Country of incorporation	Both
Legal registered address	Both
Physical business / registered where applicable	Both
Evidence of formation / legal existence	Both
Evidence or Certificate of Authority / Establishment Agreement	Both
Date of establishment and country of formation, incorporation or registration	Both
Registration number or tax identification number issued by the government or authorized body	Both
Industry type and nature of business	Both
Authorized signatory list	Both
Identify and verify controlling parties (including senior management)	Bank
Identify and verify identity of any agent opening the account	Both
Identify and verify Ultimate Beneficial Owners (UBOs) (natural persons)	Bank
In case no UBO is identified, identification verification must be obtained for the most senior controller	Bank
Regulatory / listing status if applicable for fund and fund manager	Both
Evidence of regulatory standing and registered status	Both
Name of regulator (where relevant)	Both
Sanctions questionnaire	Bank
Country of contributions (Office locations in High Risk or Sanctioned or Unrated countries)	Bank

Primary purpose of the account	Asset Manager
Source of Wealth Identify and verify	Both
Pension Plans (0)	
No additional requirements	N/A
Government & State Agencies (1)	
Identify any individuals / enterprises that may hold over 25% or 10% voting rights in the entity (if applicable)	Bank
Charities (5)	
Nature & purpose of the charity and information on objectives	Both
Name of the founder or settlor depending on the type of entity	Both
Confirmation that no particular individual benefits from the charity (where individual charity not allowed)	Both
Countries where the entity operates or finances projects	Asset Manager
Understanding on how the legal entity is funded, how funding is disbursed	Bank
Funds (4)	
Formation documents / prospectus	Bank
Certified copies of legal formation documents	Bank
Identify Both layers of ownership direct/ indirect 25% for low/medium due diligence 10% for enhanced due diligence (where applicable)	Bank
If fund is operated or advised by a registered IMA obtain a current AML programme	Bank
Publicly Traded Companies (5)	
Name of listed parent and confirmation of ownership by the listed parent	Both

Identify country of incorporation of parent entity	Both
Name of exchange and confirmation of exchange listing	Both
Name of exchange parent is listed on and confirmation of the parent's listed status	Both
Identify Both layers of ownership direct/ indirect 25% for low/medium due diligence 10% for enhanced due diligence (where applicable)	Bank

Privately Held Companies (3)

Certified original or signed legal documentation formation documents	Bank
Names of individuals who control 25% or over of its capital or profit, or of its voting rights for operating companies	Both
For operating entities, identification of all beneficial owners (enterprises and verification of individuals who own or control 25% or over (low/medium due diligence) formation documents / share registers of all beneficial ownership direct / indirect layers (enterprises)	Bank

Financial Institutions (10)

Certified original or signed legal documentation formation documents	Bank
Confirm listing (if applicable)	Bank
Name of exchange (if listed)	Bank
Name of home country central bank or relevant supervisory body/regulator (regulated status and licence)	Both
Confirm ownership by the regulated parent and name of regulated parent	Bank
Confirm the parent firm's regulated status and name of regulator where applicable	Bank
Confirm (where regulated) that AML processes of the parent being applied to the subsidiary	Bank
Names of all 10% Ultimate Beneficial Owners	Asset Manager
Due Diligence questionnaire (Wolfsberg principles)	Bank
AML Programme	Bank

Trusts (4)

Nature, purpose and objects of the trust (e.g., discretionary, testamentary, bare)	Both
Confirm structure of trust (if involving several layers of ownership) and rationale for this structure	Both
Name of the founder or settlor depending on the type of entity	Both
Names of all individuals who are beneficiaries with 25% or over interest in the trust	Bank

Partnerships (3)

Names of Partners/Principals owning 25% and above of voting rights	Both
Verify the identity of all authorized signatories	Both
Partnership agreement	Both

Associations & Cooperatives (4)

Names of management committee members	Both
Names of members	Bank
Names of members that have 25% and above of shares or voting rights	Both
Names of members that have 10% and above of shares or voting rights	Asset Manager

Glossary and Definitions

ACA	Account Control Agreement
API	Application Programming Interface
BEIS	Department for Business, Energy and Industrial Strategy
CDM	Common Domain Model
CO	Client Onboarding
CSA	Credit Support Agreement
DCMS	Department of Culture, Media and Sport
DTCC	Depository, Trust and Clearing Corporation
DLT	Distributed Ledger Technology
FCA	Financial Conduct Authority
GFMA	Global Financial Markets Association
GLEIF	Global Legal Entity Identifier Foundation
ISDA	International Swaps and Derivatives Association
KYC	Know Your Client
Leadership Group	Post-Trade Industry Leadership Group
LEI	Legal Entity Identifier
NETD	Non-Economic Trade Data
OTC	Over-the-Counter
Panel	Post-Trade Technology Market Practitioner Panel
RFQ	Request for Quote
RQV	Required Value
SIMM	Standard Initial Margin Model
SME	Small and Medium-sized Enterprises
SNO	Supra-National Organisation
SSI	Standing Settlement Instruction
Task Force	Post-Trade Task Force
UBO	Ultimate Beneficial Owner
UM	Uncleared Margin
UMR	Uncleared Margin Regulations

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