



European Securities and
Markets Authority

Reply form for the Discussion Paper on the Distributed Ledger Technology Applied to Securities Markets



Responding to this paper

The European Securities and Markets Authority (ESMA) invites responses to the specific questions listed in the ESMA Discussion Paper on the Distributed Ledger Technology (DLT) Applied to Securities Markets, published on the ESMA website.

Instructions

Please note that, in order to facilitate the analysis of the large number of responses expected, you are requested to use this file to send your response to ESMA so as to allow us to process it properly. Therefore, ESMA will only be able to consider responses which follow the instructions described below:

- use this form and send your responses in Word format (pdf documents will not be considered except for annexes);
- do not remove the tags of type <ESMA_QUESTION_DLT_1> - i.e. the response to one question has to be framed by the 2 tags corresponding to the question; and
- if you do not have a response to a question, do not delete it and leave the text “TYPE YOUR TEXT HERE” between the tags.

Responses are most helpful:

- if they respond to the question stated;
- contain a clear rationale, including on any related costs and benefits; and
- describe any alternatives that ESMA should consider

Naming protocol

In order to facilitate the handling of stakeholders responses please save your document using the following format:

ESMA_DLT_NAMEOFCOMPANY_NAMEOFDOCUMENT.

E.g. if the respondent were XXXX, the name of the reply form would be:

ESMA_DLT_XXXX_REPLYFORM or

ESMA_DLT_XXXX_ANNEX1

Deadline

Responses must reach us by **2 September 2016**.

All contributions should be submitted online at www.esma.europa.eu under the heading ‘Your input/Consultations’.



Publication of responses

All contributions received will be published following the end of the consultation period, unless otherwise requested. **Please clearly indicate by ticking the appropriate checkbox in the website submission form if you do not wish your contribution to be publicly disclosed. A standard confidentiality statement in an email message will not be treated as a request for non-disclosure.** Note also that a confidential response may be requested from us in accordance with ESMA's rules on access to documents. We may consult you if we receive such a request. Any decision we make is reviewable by ESMA's Board of Appeal and the European Ombudsman.

Data protection

Information on data protection can be found at www.esma.europa.eu under the headings 'Legal notice' and 'Data protection'.



Introduction

Please make your introductory comments below, if any:

<ESMA_COMMENT_DLT_1>

The Irish Funds Industry Association (“Irish Funds”) is the representative body of the international investment funds community in Ireland, representing fund managers, custodian banks, administrators, transfer agents, professional advisory firms and other specialist firms involved in the international fund services industry in Ireland. Ireland is a leading centre for the domiciliation, management and administration of collective investment vehicles, with industry companies providing services to collective investment vehicles with assets totaling in excess of €3.8 trillion. The funds industry is highly regulated and the ability to provide a well-regulated environment for investment funds and investment fund services is a substantial and proven part of Ireland’s international financial services offering. Our industry has been a consistent and growing part of the internationally traded financial services landscape in Ireland for over twenty-five years.

Irish Funds is submitting this response to the Discussion Paper on the Distributed Ledger Technology (DLT) Applied to Securities Markets (the “Discussion Paper”) on the understanding that ESMA will use the feedback to this discussion paper to develop a position on the use of the DLT in securities markets and in particular to assess whether a regulatory response may be needed.

<ESMA_COMMENT_DLT_1>



Q1: Do you agree with the list of possible benefits of the DLT for securities markets? Please explain, e.g., are these benefits unique to the DLT, are some more important than others, are some irrelevant?

<ESMA_QUESTION_DLT_1>

Irish Funds agree with the list of possible benefits that DLT could bring to the securities markets.

We feel that DLT has the potential benefit of sharing a common system of records between all parties in a business network. The elimination of multiple intermediaries (especially in the case where different intermediaries use different technology infrastructures) has the potential to speed up the clearing/settlement process.

The cost / benefit trade off to the implementation of DLT in the settlements process would however need to take account of the current T2S roll out and the significant investments already made in this space.

We also see potential for very important benefits in terms of information sharing between fund stakeholders having a large impact on operations allowing for improved sharing of positions, transactions and record ownership. That said, record ownership could bring legal issues for cross border transactions as different laws apply in different jurisdictions and so would need to be investigated.

Corporate actions and proxy flows would seem to be suitable for DLT improvements due to the manual nature of the processes and the need to distribute and exchange information to and with a large number of underlying stakeholders. The use of smart contracts in this corporate action space could also bring some large benefits.

<ESMA_QUESTION_DLT_1>

Q2: Do you see any other potential benefits of the DLT for securities markets? If yes, please explain.

<ESMA_QUESTION_DLT_2>

In addition to the benefits outlined, standardisation and increased automation, through the implementation of DLT, may result in

- Potential reduction in the barriers to entry to the financial markets and financial services industry, thus creating more competition and benefiting the end user.
- Reduced operational risk due to a decrease in manual errors
- Increased efficiency in operations.
- Automation of part or all of AML/KYC checks whilst removing duplication at each stakeholder's databases. The openness of data should make it difficult for false data to pass checks resulting in reduced errors.
- Distribution models in investment funds could be revolutionized to ensure accuracy through automation

<ESMA_QUESTION_DLT_2>

Q3: How would the benefits of the technology be affected, in the case where the DLT is not applied across the entire lifecycle of securities (i.e., issuance, trading, clearing and settlement, safe-keeping of assets and record of ownership) but rather to some activities only?

<ESMA_QUESTION_DLT_3>

We feel that it is unlikely that there will be a 'big bang' implementation of DLT in every area of the securities lifecycle. It is likely that DLT will be implemented in a part by part process resulting in interfaces with existing financial systems being needed. DLT solutions are not yet at a stage where they are usable in a full enterprise mode and we therefore assume that DLT will develop over time and spread gradually across markets, instruments, locations and participants. The situation will likely be fluid and constantly changing, which will bring its own benefits, challenges and opportunities.



The development of a number of DLT's across the industry to help resolve a number of issues could lead to development requirements for each DLT to integrate. This development work should not be underestimated. Although over time we would expect that the benefits of DLT will be clearly seen in tangible improvements.

The build out of satellite systems to connect the areas not using DLT will bring an additional cost for companies. However, it is believed that as long as the overall benefits outweigh those costs it is worth implementing, even for a fraction of the lifecycle. The main challenge will remain that financial institutions are often hesitant to invest in the implementation of new (not broadly adapted) technology.

<ESMA_QUESTION_DLT_3>

Q4: Which activities (e.g., post-trading, other activities), market segments and types of assets in the securities markets are likely to be impacted the most by the DLT in your opinion? How is the DLT likely to modify the way securities markets operate? Please explain.

<ESMA_QUESTION_DLT_4>

We feel that AML/KYC process could be more transparent and automated through the use of DLT with the associated benefits to all stakeholders.

In the medium term, bilateral OTC derivative contracts may benefit from the introduction of DLT networks. The introduction and use of "Smart" OTC contracts would make trading these instruments and the management of the contract through its life cycle more efficient.

Activities such as Nav calculation, movement of shares and auditing of accounts could also potentially be impacted by the adoption of DLT<ESMA_QUESTION_DLT_4>

Q5: According to which timeframe, is the DLT likely to be applied to securities markets in your view? Please distinguish by type of activities, market segments and assets if relevant.

<ESMA_QUESTION_DLT_5>

We believe that the DLT will impact the securities market in different ways depending on the countries, assets and segments.

We would see a broad adoption of DLT taking at least 5-10 years to gain significant traction within the securities markets. Niche adoptions may take place in a shorter timeframe (e.g. bilateral OTC contracts maybe 3-5 years, and may grow to a size where broad market adoption is inevitable while Financial companies may implement internal specific solutions within potentially a 2-5 year timeframe).

Consortia of institutions working together on common standards and protocols for DLT systems are one way in which the issue of consensus might be addressed over the identified timescales.

<ESMA_QUESTION_DLT_5>

Q6: How might your organisation benefit from the introduction of the DLT?

<ESMA_QUESTION_DLT_6>

The principle benefits to the asset management industry are well set out within the paper, although while inferred but not specifically mentioned, software development will be significantly impacted. Using a common database, i.e. the DL's, should significantly reduce internal software development and reduce the costs of third party software solutions.

In the short term, it is likely that due to investments into new technology and the gradual replacement of old technology (i.e. no big bang) different systems will co-exist and require maintenance as well as interfaces to ensure consistency. In the longer term, we believe that the technology has the potential to significantly reduce operating costs and improve our products and services for clients.



The commitment of the entire industry is key to reaching the expected benefit with the necessity to standardize a certain number of elements. Collaboration is key for this to work.

DLT could also significantly reduce operational risk due to automation and smart contracts which could significantly reduce the systems and interfaces which the industry employs currently.

<ESMA_QUESTION_DLT_6>

Q7: If you are working on a concrete application of the DLT to securities markets please describe it (i.e., which activities, which market segments, which type of assets and for which expected benefits) and explain where you stand in terms of practical achievements in relation to your objectives.

<ESMA_QUESTION_DLT_7>

Irish Funds are reviewing a number of DLT initiatives at present.

<ESMA_QUESTION_DLT_7>

Q8: Do you agree with the analysis of the potential challenges? Please explain, e.g., are some more important than others, are some irrelevant in your view.

<ESMA_QUESTION_DLT_8>

We agree that the primary challenge will be the technology itself. In the period where not all parties are using DLT for the entire lifecycle of securities, (specific) interfaces will need to be created to allow interaction between multiple different systems. It would be challenging to expect companies to invest resources building “temporary” solutions until DLT is broadly used.

The governance of the DLT network may be difficult to gain consensus upon. Each interested party may have their own view on governance thus potentially leading to protracted negotiations to achieve a consensus.

We agree that another key challenge is the immutable nature of the record which could make amending errors difficult. However, it is possible that solutions could be found for this through the deployment of smart contract logic on top of a DLT. In such a scenario amendment / adjustments could be made by redeeming the contract with a subsequent re-issuance. That said, it is certainly our belief that there would be the need for a correction mechanism for this to succeed.

The situation of nodes in the DLT in multiple legal jurisdictions could raise conflict of law issues. Even with one contractual law, these may prove difficult to manage.

We agree that scalability and the ability of the DLT to handle higher transaction frequencies is also a challenge. Future Proof of concepts would be required to relieve these fears as algorithms improve.

Potential challenges exist in the data privacy space if the distributed nodes are subject to different data protection requirements. In a permission-less set up, this might be of particular importance as the data would be distributed across different jurisdictions where the standards might not be in line with those of other nodes and potential client data could be exposed. Even in a permission based network the DLT governance framework will require an agreement on how data privacy can be ensured across the different jurisdictions.

<ESMA_QUESTION_DLT_8>

Q9: Do you see any other potential challenges? If yes, please explain.

<ESMA_QUESTION_DLT_9>

The implementation cost may be another major challenge, especially in the early stages where DLT is not yet widely used or not yet used for the complete lifecycle of securities. To mitigate this risk, it will be important to achieve a standard way of implementing the technology. Stakeholders in financial institutions will need to be convinced of the use cases of this technology before putting significant resources behind it.

Broad adoption of DLT across the market and the need for industry wide standards will require cooperation across differing groups (including regulators) for the desired network effects to be realized.

DLT relies on an assumption that it is very secure because records are encrypted. However, with time comes advancement in computing technology (e.g. quantum computing), which may result in a current un-hackable network becoming vulnerable.

A real-time settlement process could also make the processing of corporate actions more complex when the system would be running 24/7/365. A certain cut-off time would have to be determined to allow for a snapshot of the system to be taken.

The treatment of current regulation needs to be catered for. Governance of the DLT and smart contracts will also be a clear challenge. In that sense, private DLT might help both in terms of compliance with the regulatory framework and in terms of respect of privacy and transparency. It is not clear whether a new regulatory framework would be required – especially considering the cross-border nature of the DLT – or whether the existing framework might be applicable.

<ESMA_QUESTION_DLT_9>

Q10: Which solutions do you envisage for these challenges and where do the current initiatives stand in terms of practical achievements to overcome them?

<ESMA_QUESTION_DLT_10>

The challenge of potential visibility of data to other participants can be addressed through permissioned DLTs which could steer through the public/private keys and the respective set up as to what participants can see and what cannot be seen

A common forum (board/group) with influencers from each area would be a good start to streamline the entire process of implementing DLT across all market segments.

Clear regulations will be key to overcome common challenges in the DLT domain.

With security, one would hope that cryptography will advance in-line with increase computing power to ensure security is maintained. This challenge is not unique to DLT and is faced by all of technology.

<ESMA_QUESTION_DLT_10>

Q11: Do you agree with the analysis of the key risks? Please explain, e.g., are some risks more important than others, are some irrelevant in your view.

<ESMA_QUESTION_DLT_11>

We agree with the key risks outlined in the paper while noting that it is likely that DLT would be implemented via a permissioned based system within capital markets, which should substantially reduce the risk of dishonest nodes as we would consider cyber-attacks and exposure of private data one of the major risks.

One of the key benefits, having one streamlined system covering the entire lifecycle of securities, can become potentially one of the biggest risks as well. With having everything in the same place the risk of contagion is imminent when one of the systems gets compromised.

There will need to be a strong reliance on the security measures applying to node access, i.e. minimum standards to be adhered to in the network and security of keys to access the network.

<ESMA_QUESTION_DLT_11>

Q12: Do you see any other potential risks? Please explain.

<ESMA_QUESTION_DLT_12>

We would consider the implementation of the DLT system itself as another risk. Financial institutions tend to be quite hesitant to introduce new technologies, especially of this scale. As DLT has never been operational at such a large scale there is the risk that the perceived benefits would not be as large as anticipated. Therefore, there is the risk that the cost of the implementation and process change would not be covered by the potential benefits.

As mentioned earlier, while DLT may seem robust and secure now, with future advances in computing power, vulnerabilities & weaknesses maybe found by those after economic gain/disruption.

Data quality of Smart Contracts. If software code is deployed which contains errors or backdoors these may be exploited by other members of the DLT. A strong governance agreement on the system would be required to ensure that such errors are detected early and not exploited.

<ESMA_QUESTION_DLT_12>

Q13: How could these risks be addressed? Please explain by providing concrete examples, especially for the risks potentially affecting your organisation.

<ESMA_QUESTION_DLT_13>

A common forum/board/working group could be established to evaluate all challenges and risk that can potentially occur.

The development of a permissioned network with sufficient standards and governance around providing access. The key to a functioning DLT system would be the limited participation and the subsequent identification (KYC) process for those entities being part of the system. This would help create a level of confidence and trust that no fraudulent transactions are being executed. However, the success of a DLT system also largely depends on the acceptance and participation of the wider market and imposing significant conditions to participate in the system could limit adoption. A permissioned system needs to create transparent and sufficiently high access requirements to deter parties with improper intentions as is already the case in today's markets, whilst not restricting the broader uptake of the technology.

<ESMA_QUESTION_DLT_13>

Q14: Do you think that the DLT will be used for one of the scenarios above? If yes, which one(s)? If no, please explain?

<ESMA_QUESTION_DLT_14>

Yes, it is our belief that there is the potential in the area of bilateral OTC derivatives that are not subject to clearing through CCP's. Currently this offers a space where DLT technology could potentially be used.

<ESMA_QUESTION_DLT_14>

Q15: If the DLT is used for one of these scenarios, how compliance with the regulatory requirements attached to each scenario could be ensured?

<ESMA_QUESTION_DLT_15>

In this scenario, DLT is only used as a technology based method of delivery replacement; therefore, it should not present any difficulties in meeting current regulatory requirements.

Our belief is that the early stages of DLT should not reinvent the current regulatory process. It should be designed to meet the existing regulatory requirements in their present format. Risk mitigation is a regulatory responsibility irrespective of method of delivery.

Longer term it is very difficult to accurately forecast what effects DLT could have on regulatory requirements.

<ESMA_QUESTION_DLT_15>



Q16: Do you think that the DLT will be used for one of the scenarios above? If yes, which one(s)? If no, please explain?

<ESMA_QUESTION_DLT_16>

DLT has the potential to facilitate settlement activities but at this point we believe that a DLT network would not comply with the requirements of the CSDR. Until DLT gains traction and broad acceptance as a viable technology, we do not see it being designated as a securities settlement system.

<ESMA_QUESTION_DLT_16>

Q17: If the DLT is used for one of these scenarios, how could compliance with the regulatory requirements attached to each scenario be ensured?

<ESMA_QUESTION_DLT_17>

N/A

<ESMA_QUESTION_DLT_17>

Q18: Do you think that the DLT will be used for safekeeping and record-keeping purposes? Please explain, with concrete examples where appropriate.

<ESMA_QUESTION_DLT_18>

We believe that there will be a challenge to creating a common, global process given the fact that different rules/laws/legislations/directives apply in different jurisdictions and sectors. These challenges that can be overcome, but will complicate the overall implementation of DLT (especially for companies operating in multiple jurisdictions).

It is possible that within a DLT-supported environment the need for safe-keeping might no longer be needed as the records would establish the amount of securities assigned to each “node” in the chain. It may be necessary to develop applications which are able to extract the information of securities owned by a certain entity from the overall chain.

Having a single version of the truth can increase efficiency of back-office departments –removing this concern will definitively make the market more efficient

<ESMA_QUESTION_DLT_18>

Q19: If the DLT is used for the safekeeping and record-keeping of ownership, how could compliance with the regulatory requirements be ensured?

<ESMA_QUESTION_DLT_19>

We believe regulatory requirements may need to change to embrace the potential of DLT networks. Current regulation may not cover certain aspects of security transaction process using DLT networks. If industry and regulators see that DLT has a real future as a core technology within the capital markets, then a joint effort in developing the framework for such solutions needs to be adopted. Through the technical set up with public and private keys it could be ensured that regulators could see all data they would need to see, an issuer could see all his shareholders and an investor could obtain a view on his investments.

<ESMA_QUESTION_DLT_19>

Q20: Do you think that the DLT will be used for regulatory reporting purposes? Please explain, with concrete examples where appropriate.

<ESMA_QUESTION_DLT_20>

It is our view that there is certainly potential for this use-case. By way of example, existing reports could be submitted to regulators via DLT, however, in this scenario, the DLT would only serve as a communication medium. Looking to a future where DLT is used extensively, the need to submit regulatory reports may well diminish as regulators have access to the real-time data on the DLT network.

If regulator is a 'node' on the system - or something similar - there would be no need for dedicated feeds with associated reconciliation problems. Regulators would have access to the golden record in real time. Ultimately, the reporting could be better than today in some trade repositories as the data would be first hand and not subject to the errors in completeness and accuracy which can occur today.

The associated challenges with reporting via a DLT include issues with data protection, cyber security (as the regulator holds the access to all data on the DLT, it might become itself a target for cybercrime attacks). To mitigate this, the set-up will strictly have to be view-only which can only be addressed in a permissioned set up.

<ESMA_QUESTION_DLT_20>

Q21: If the DLT is used for regulatory reporting purposes, how could compliance with the applicable regulatory requirements be ensured?

<ESMA_QUESTION_DLT_21>

At present the majority of the responsibility for regulatory requirements lies with the Investment manager and or fund. We do not believe that the use of DLT will change this requirement and as the use of DLT in this scenario is as a method of delivery, we do not see any issue with its operation within the existing regulatory requirement.

We would expect that participants would be responsible for ensuring that all required regulatory information is available in the DLT environment.

Early engagement with the regulatory authorities on plans for DLT is crucial to ensure their support. Regulators having access to DLT could mean that they have enhanced ability to perform compliance checks at a time of their desire due to the immediate access to large volumes of 'instant' data available to them via the DLT.

We believe that ESMA should play a role in defining the governance and organization of DLT regulatory reporting to ensure common compliance across all DLT's

<ESMA_QUESTION_DLT_21>

Q22: Do you think that the DLT could be used for other securities-related services than those already discussed, in particular trading and issuance?

<ESMA_QUESTION_DLT_22>

DLT related in-house reconciliations tools could lead to a reduction/replacement of multiple trade booking/reporting systems.

We also feel that DLT cannot be used as a potential solution for every challenge in the financial industry. Collaborative efforts are required to shift existing value chain to DLT. This will be an ongoing process of which the industry is at the very early stages.

<ESMA_QUESTION_DLT_22>

Q23: Do you see potential regulatory impediments to the deployment of the DLT in securities markets?

<ESMA_QUESTION_DLT_23>

As identified within the discussion paper, we agree that currently there seems to be significant regulatory impediments to deploying DLT to the securities markets, particularly within the area of settlement activities.

A further potential impediment could be the requirement in CSDR that transferable securities will have to be recorded in a CSD if they are traded on an exchange. This could prevent the broad usage of DLT in the



settlement space. The current definition of a central securities depository might not be compatible with a decentralised distributed ledger.

<ESMA_QUESTION_DLT_23>

Q24: Should regulators react to the deployment of the DLT in securities markets and if yes how? If you think they should not do so please justify your answer.

<ESMA_QUESTION_DLT_24>

Regulators will need to work with the industry to advance DLT's deployment as changes to regulation will be required to allow DLT's to be established that cover the entire lifecycle of a trade.

In the short term regulators should form a view on how acceptable DLT solutions are within the existing regulatory framework and a long-term view on how things may need to change if the technology shows a credible business case for broad adoption and major change to financial system architecture.

<ESMA_QUESTION_DLT_24>