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| 2 June 2016 | ESMA/2016/773 RF |

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| Reply form for the Discussion Paper on the Distributed Ledger Technology Applied to Securities Markets  |
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| Date: 2 June 2016ESMA/2016/773 RF |

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](http://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](http://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 Luxembourg Bankers’ Association (“ABBL”) is the professional organisation representing the majority of banks and other financial intermediaries established in Luxembourg. Its purpose lies in defending and fostering the professional interests of its members. As such, it acts as the voice of the whole sector on various matters in both national and international organisations.*

*The ABBL counts amongst its members universal banks, covered bonds issuing banks, public banks, other professionals of the financial sector (“PSF”), financial service providers and ancillary service providers to the financial industry.*

***Information about the ABBL:***

***ABBL ID number in the COM Register of interest representatives:***

*3505006282-58*

*Identity: Organisation*

*Capacity: Industry trade body*

*MS of establishment: Luxembourg*

*Field of activity / industry sector: Banking & other financial services*

*Website:* [*www.abbl.lu*](http://www.abbl.lu)

Overall, ESMA’s view on prospects of the DLT application to securities markets represents a balanced approach taking into account potential advantages and disadvantages of the emerging technology. Prior to any significant advances in deciding to introduce or not new regulations, a first thorough cost and benefit analysis has to take place, involving all stakeholders concerned by the changes to come, from investors to intermediaries and of course custodians or providers of trade and post-trade services. After all, and for the nearest future, the corpus of regulations has created a very resilient environment and until now it is still offering satisfactory efficiency levels. We would advise as well to organise such research in several rounds to understand how DLT experimentation will develop as we suspect that the benefits delivered will accumulate over time.

From an ABBL point of view, we would like to highlight several general principles among which:

* As identified in the ESMA paper, we do expect as well that among the activities likely to be impacted the most by the DLT are settlement, clearing, record of ownership (transfer agent/registrar) and collateral management, where records are the predominant feature of the activity.
* The value of DLT as a technology will be reinforced if the level of standardisation is high (to ensure compatibility and access by all stakeholders). The issue of the lack of standards and commonly accepted protocols remains the main barrier and a cornerstone of the adoption of DLT infrastructure at the moment. Cross-market and multi-stakeholder initiatives could definitely contribute to the development of the DLT standards in the market.
* We think as well that today many activities in the remit of DLT are subject to prudential and governance regulations; therefore, setting up of a level playing field is another crucial point to consider. Otherwise, new comers will not only benefit from an unfair advantage but may present new – potentially systemic – risks for the economy or at least the financial eco-system. Furthermore, streamlining the playing field is the only way when all market actors could enjoy equal opportunities and motivation to proceed further with DLT experimentation.
* Furthermore, unless the technology is significantly improved, we do not expect that DLT will be applicable to all types of trading. In any case, we believe all initiatives are going to be partial in the early stages and will not cover the entire lifecycle of securities.
* Deployment of DLT architecture will require the development of robust underlying technologies and more demand for qualified staff with a new bundle of skills. For example, in combination with AML/KYC solutions, DLT may prove a powerful tool for the fund industry specifically for transfer agents whose task is to record funds units with investors.
* We fully agree that in order to succeed in an environment where trust and brand names are the way to protect investors and clients through the ability to commit capital in case of trouble, the DLT applied to securities markets has no other option but to be “permission-based” at least for the foreseeable future.
* All in all we strongly believe that scalability remains the most important issue; even if we believe this problem will be addressed in the coming years.

To conclude, the question of interoperability with the existing systems and between the different networks may prove crucial where among the concerns related to digital issuance of securities (and its legal recognition in all MS and in third countries), legal enforceability of DLT-based transactions, the reliability of the DLT to perform under heavy or stressful market conditions, time stamp, and transactions carried out outside business hours.

<ESMA\_COMMENT\_DLT\_1>

##### 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>

Not entirely.

We think that the clearing and settlement chapter is the most important one as the DLT has an ability to reduce collateral amounts to be posted and to limit capital consumption connected with settlement risk. We consider that legacy financial Infrastructure has been developed to respond to market and regulatory demand in a gradual iterative process; therefore, hub and database architecture, traditionally based on centralized and unencrypted features, may appear expensive, not so efficient, and in some cases vulnerable to the operational failure and cyber-attack.

However, the levels of performance and reliability of the existing infrastructure are very high with an extremely low rate of settlement failures in payments or securities transfers (largely below 1%). In some respect, building a completely new architecture across all market participants could be a strategically optimal but a highly unrealistic approach in the short and medium run considering the need for new standards, communication protocols, and etc. Besides, the eventual DLT architecture is yet to be developed, tested and agreed by market actors. Moreover, the new technological infrastructure would need to fit into the existing regulatory environment both from a financial process perspective and a KYC/AML or data protection point of view. Meeting all these requirements at the same time and in a secure banking like environment with, for example capital requirements or prudential regulations, is definitely not a given.

If DLT, possessing its clear advantages, is to come to the securities markets, it must be deployed in a level playing field with the same or similar capital requirements for banks and potential new comers. In this regard, it would be absolutely unfair to let new entrants, being out of such regulation, disrupt the existing settlement and reconciliation processes. To underline, if banks were not subject to the prudential regulation they could as well organise their business models differently.

It is true that because of the evolution of the markets, currently, multiple entities keep records of the same information and ensure its consistency through a cumbersome reconciliation process that could definitely be simplified by DLT if it were deployed and robust enough to handle all the volumes.

We believe such benefits as the record of ownership and safekeeping of assets, reporting and oversight, reduction of counterparty risk, and efficient collateral management may be significant, but this would mean that stakeholders would have to agree upon a set of similar rules in terms of processes, communication and protocols. If we can draw a parallel, the ECB T2 and T2S projects took nearly a decade before their deployment and in this case the project was “forced” by an EU powerful authority. On the other hand, the experience obtained from the implementation of the T2 and T2S projects could positively contribute to the respective learning curve that may result in shortening the DLT deployment time-span.

Also, we value as an important benefit the possibility of the regulator to access directly the trading data instead of asking banks for it. We agree with the point 21 regarding the necessity of relying on CCPs in derivatives trades due to the collateral and margins requested during the trade lifecycle.

Furthermore, improvement of CA processing due to Smart Contracts implementation is a major DLT opportunity once compatible protocols will be defined, which raises the question of who will ensure that standardised processes do exist. If this is not the case, the outcome will be an optimised DLT procedure per issuer yet with a high degree of heterogeneity and consequent incompatibility at the market level, which is a not desirable outcome.

Potentially, DLT could support the threshold reporting in the area of company ownership and voting rights but again, from a market perspective, there is likely the need to agree at least on some principles and common protocols until the market will be completely disrupted and disorganised and unable to emerge to a better proposal than the actual.

<ESMA\_QUESTION\_DLT\_1>

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

<ESMA\_QUESTION\_DLT\_2>

Yes, we do.

We consider that DLT could drive a significant harmonization of procedures and regulations across securities types, but first there is a very strong need to spread the gospel and force the market into a single or similar direction. The value of DLT as a technology will be reinforced if the level of standardisation is high. Furthermore, unless the technology is significantly improved, we do not expect that DLT will be applicable to all types of trading. As the process of confirmation/approval of transactions needs computer power paralleled with a high number of market participants and market volumes, we do not expect that DLT is compatible (in the short term) with high frequency trading strategies or a high number of transactions like in the payment domain (note the difference in volume between Bitcoin and any major currency).

There is a benefit in applying smart contracts not only to derivatives transactions but also to cash products. Issuing smartbonds or smartequities can reduce costs and ease primary issuance processes, which nowadays are bulky and manual and also cover corporate actions in all product lifecycle. This being said, the benefit itself should not necessarily be overestimated, as the deployment of DLT solutions will require qualified staff with a new bundle of skills and the development of robust technologies. Hence, in overall, full benefits may not materialise before a certain time.

In theory at least, terms and conditions for a bond can be recorded into a DLT for all bondholders. The DLT can connect and interoperate with the bond and automatically refresh the outstanding portfolio. Such events as convertibility and optionality can be executed in the DLT and extended to the whole market. These are the markets where DLT may be a powerful tool, probably contrary to equity securities or transactions that are both smaller and much more frequent. However, such context could be not optimal for DLT and, above all, for open DLT namely the ones that are out of a controlled or agreed environment.

Potential benefits may also be possible for the investment funds industry. It is worth researching if DLT may be applied to units register and asset register. In combination with AML/KYC solutions, DLT may prove a beneficial tool for the fund industry specifically for transfer agents whose task is to record funds units with investors.

<ESMA\_QUESTION\_DLT\_2>

##### 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, safekeeping of assets and record of ownership) but rather to some activities only?

<ESMA\_QUESTION\_DLT\_3>

It is certain that DLT will offer the largest benefits if the entire industry is aligned on similar if not the same standards and protocols even if, at the same time, this may introduce some systemic risks in the system such as the need to ensure resilience of the different nodes, to ensure against attacks to the system, to avoid the snow ball effect if a weak party is under stress, and etc. In the other case, where there are multiple coexisting DLT systems, issuers, dealers, agents and other market participants would not benefit in full of DLT applicability although the concept remains to be defined.

DLT enables the opportunity for economies of scale achieved by allowing the transaction to serve simultaneously as agreement, settlement and regulatory reporting. Instead of building countless duplicative and redundant services, one DLT record can serve as the source of necessary information eliminating the need for reconciliation and increasing the post-trade processing speed.

One may even wonder if the jump to DLT would not create a systemic macro-economic effect similar to the digitalisation structurally reducing the inflation level in the economies.

If the DLT would not be applied across the entire lifecycle of securities, it would imply more interfaces (process-wise and technological-wise) between the existing and the new infrastructures, which would increase costs, risk, and probably the degree of complexity. In this context, it may be even more damaging than the existing architecture as the respective process based on DLT will need a circuit breaker to avoid the execution of potentially erroneous trades, which will be highly complex to unwind due to, for instance, the reverse proof of work and the consensus among counterparties to “accept” or recognise the cancellation.

However, in order to launch the minimum viable product (MVP) and/or the proof of concept (PoC), we believe all initiatives are going to be partial in the early stages and will not cover the entire lifecycle of securities. That is why we expect the multiplication of “clubs” like R3 or similar to deliver solutions to a particular problem in a semi controlled environment.

<ESMA\_QUESTION\_DLT\_3>

##### 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>

Much will depend on the depth and the spread of DLT. Under a restrictive scenario, DLT will concentrate only on specific sub-segments of markets in niches where both the participants and the technology will benefit of a standardised platform, as it is the case for some types of derivatives. In that scenario, there will be a reduced impact on the overall practices at each layer. An alternative scenario could be that DLT being so powerful and so efficient that it replaces the traditional trading approach from A to Z – from trading to settlement. In that scenario, the activities will be performed simultaneously so the distinction between trading, clearing and settlement will be inexistent and that will, of course, mean a complete rewrite of the rule of the game. What is key to bear in mind is that under such a scenario even the settlement finality may be acknowledged differently than today: anyhow if all counterparties agree to the change of property, there may not be a need for SFD.

Among activities likely to be impacted the most by the DLT are settlement, clearing, record of ownership (transfer agent/registrar e.g. as a legal entity), and collateral management.

In terms of the product, in the short run, we do not expect that high frequency traded (or exchanged) products are suited to the DLT due its current scalability issue. Structurally speaking, the concept of proof of work requires some time to be performed, i.e. the more transactions, the longer it will take to process them, which leaves the room for respective risks in the system. This is an outcome that is not desirable.

We expect that derivatives, insurance contracts and some fixed income products may be prime target for DLT besides solutions for SMEs, e.g. an access to funding and distribution of dividends.

There could also be an opportunity for Investment funds (fully automated portfolios etc.) both on distribution and asset investment ends but the success is likely to be dependent on the trade frequency. Issuance can be another key function but likely to happen in a second wave.

<ESMA\_QUESTION\_DLT\_4>

##### 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>

Non-cleared EMIR derivatives in the first stage (i.e. Cross Currency Swaps and non-eligible exotic products). Cash products in the second stage. Clearing and settlement first. Issuance and pre-trade after.

We do not think that defining a timeline is realistic, notably because we expect a winner takes all approach. It may take some time before market participants reach the level of “conviction” to jump to the new environment but if the promises are delivered it would only take a matter of months before the market is fully converted. A possible indicative timeline could look like follows based on information in the press:

Private markets – 2 Years

Investment funds – 4-7 Years

Public markets – up to 10 years

<ESMA\_QUESTION\_DLT\_5>

##### How might your organisation benefit from the introduction of the DLT?

<ESMA\_QUESTION\_DLT\_6>

There could be potential benefits in all the items defined in the benefits points in the document (chapter 3) but mainly in settlement/clearing, reconciliation and costs. Also some savings in all reporting projects could be another benefit, in particular by sharing and replicating information, distributed ledgers could allow for real-time information, reducing error or “fail” rates, and tremendously reducing costs in a result of building the shared infrastructure.

We also think that internal audit at group level may benefit of streamlined procedures accessible 24/7 updated in real-time and fully traceable.

We see some potential as well in areas of KYC/AML and reporting of records of transactions to authorities be they ESMA, EBA or EIOPA to name a few.

<ESMA\_QUESTION\_DLT\_6>

##### 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>

As an association, we do not work on such project, but our members may develop some PoCs in-house and in cooperation with external partners.

<ESMA\_QUESTION\_DLT\_7>

##### 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>

Not entirely.

Scalability currently remains the most important issue. If not solved, the value of DLT will downgrade in favour of smart contracts when DLT itself will then become just a way of these new contracts to be executed.

The issues around governance and privacy are also highly important: in a new DLT environment, the concepts of governance and privacy will significantly change/evolve as new forms of interaction and collaboration are likely to emerge, possibly making it very difficult to ensure proper and satisfactory governance of the new ecosystem.

In terms of challenges, there is as well a need to take into account the type of DLT structure that will be set up. In the classical permissionless approach, there is a need for the miners to exist in order to support the functioning of the system. This approach has respective costs and their true volume may not be clearly displayed in the price of the transaction considering such aspects as computing power mobilised, the cost of energy, and the way the remuneration of the miners is designed. That is one additional reason why we believe that “clubs” under permission-based approach will be the initiators of the trend, but for them as well there is a need to take into account the costs of maintenance of the systems, constant upgrade and incentives.

From a market perspective, there is a major concern about what will happen if all of a sudden a key player of the DLT infrastructure stops operating, exits the market, encounters a major technical failure or looses incentives. Contrary to this, what will happen if an entity suddenly gains “monopolistic” power? Due to the “winner takes all” approach, it may be too late to get out of an undesired process.

We fully agree that the DLT applied to securities markets must be “permission”-based. Only in this way it is it possible to reduce the effort for the consensus mechanism and to reach a higher scalability. The question remains on who should run the permissioned DLT and who should control the access rights to the network: a CCP as suggested by current regulation or another entity. We see the risk if the operator of the DLT acts on a profit basis and the access rights are linked to high costs for new participants of DLT. We would prefer a supra-national organization to administrate the DLT architecture on a non-profit basis.

The question of interoperability with the existing systems and between the different networks may prove crucial (the experience of EMIR’s lack of interaction between different trade repositories is a good example). In this respect, it must be clear that if stakeholders do work in the same business (activity) they should operate with a similar capital structure. The capital behind the operator is needed to protect the market in accordance with prudential regulation (CRD/CRR, Banking Union, BRRD, CSD-R, EMIR, recovery of FMI, and etc.). Ensuring a sufficient level of capital protection will also mean that new stakeholders are credible enough and are able to put respective means behind their promises.

Regarding the point 32, we believe that central banks are likely to issue Fiat currencies in the ledger. This could ease the whole DVP and final settlement and value interchange dramatically and switch it to a new paradigm of instantaneous exchange.

<ESMA\_QUESTION\_DLT\_8>

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

<ESMA\_QUESTION\_DLT\_9>

Yes, we do.

The first challenge comes definitely from many protocols that may co-exist during a period of time: lots of different standards, protocols and even languages can complicate expected DLT adoption. That is why interoperability is key and massive adoption of DLT is questionable unless this issue is resolved. On top of this, there may be a need to solve more prosaic issues like: could one issue financial instruments fully digitally. Currently, not all member states (MS) do recognise electronic issuance.

We also see a regulatory risk: after a careful assessment by regulators, DLT implementation needs regulatory backing. Otherwise, all these initiatives may turn out blurred and/or incomplete and the whole market will not be able to benefit from it. Operations done through DLT have to be legally enforceable.

Furthermore, security and public trust of any innovative solution are always a challenge. From an operational point of view, back value bookings and fixes are not possible and the mechanism of mistakes correction is not known above all in open systems. It is unknown how the DLT based market would behave under heavy or stressful market conditions: e.g. large number of trades and volatility: as experience does show these occur more often than statistical models do foresee.

Another concern is time differences – is a change of ownership in DLT-finance valid if it happens outside the business hours in a particular market. Is the validation accurate if it happens outside the business hours of the validator? Do we need to develop an Internet neutral time?

Finally, legal enforceability and the time stamp in case of opening the insolvency proceedings could also be among potential challenges, as well as the rights recognised or attached to DLT records, smart contracts, and etc.

<ESMA\_QUESTION\_DLT\_9>

##### 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>

Most of the Proof of Concepts (PoCs) and projects that banks are running are dealing with the challenges mentioned in the document. Banks, through their relationships and partnerships with blockchain companies, are addressing all of them from different angles. Depending on the protocol to be used, the potential solutions could vary deeply. Since the emergence of the DLT topic a few years ago, we witness that the approach to changes has evolved and now many of the proposed projects are developed in “clubs” meaning that if a solution is found then it may be deployed fast across markets and potentially across the globe.

Regarding current transaction rate limitation of the DLT, the adoption of a “permissioned” type DLT, requiring less sophisticated encryption mechanisms, coupled with fine-tuning of emerging DLT PoCs capable of hundreds of thousands records per second, which we as an association are aware of, give a hope that the scalability issue will be addressed in the medium run and will no longer represent a stumbling stone for the technology.

The recourse mechanism in DLT is technically possible, for instance, by adding a new record of transaction offsetting the erroneous one. Nevertheless, respective consensus and reconciliation mechanisms are yet to be developed and agreed upon by stakeholders in compliance with the regulation and meeting the demand for the high speed of transactions.

<ESMA\_QUESTION\_DLT\_10>

##### 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>

Not entirely. Additional risks should be taken into consideration.

The most important risks are associated with potential systemic impacts of cyber-attack risks and operational risks. That is also why we believe that the first solutions to emerge will be deployed by “clubs” of “global and respected” stakeholders that are able to resist cyber attacks and put their brands behind a solution.

Regarding the point of “increased volatility levels” (section 5.3), we believe that the situation is the contrary, as DLT can be an enabler of transparency and more certainty. For example, certain events that trigger market volatility have their reflection in DLT records. In other words, the gossip, rumours and market sentiments are always difficult to control but can lower its impact using DLT and volatility can turn out in a more fact-based market variable. Besides, information that causes volatility will be traceable, which makes the whole financial system more controllable and accountable. On the other hand, this may as well create some discomfort in certain situations (e.g. in the context of dictatorial regimes…). Furthermore, even if financial transactions become all of a sudden fully transparent and recorded from A to Z, there is also a need to have systems that are able to collect, process and analyse the highly complex and constantly enlarging volumes of data. Meanwhile, we, as an association, are aware of existing generic solutions capable of addressing such. Yet, such DLT tools have to be adapted to the requirements of the securities markets and their respective regulatory environment and given the global nature of the business this is likely to require at least EU solutions if not global ones.

The risk of unfair competition may also prove to be significant, particularly if participation in the DLT network makes it economically unviable for smaller banks to join the network. This is what the current deployment in “clubs” may create from the outset even if it is beneficial in the first days. Besides, since the end of 2015 and the beginning of 2016, market actors individually and jointly with their partners have become very active in patent applications for the solutions based on DLT (originally developed as an open source protocol). This is particularly evident in the USA. In case if patents are actually granted, leading to temporary IP-induced monopolistic market behaviour, this may impose additional barriers and create transaction costs for the adoption of DLT solutions. However, these are the risks inherent to innovations in other industries and not only the ones related to DLT.

Meanwhile, the network effect is crucial. Having a best-in-class technology but used by a single entity or in the limited scope will not lead to market synergy and respective positive externalities. The success of these technologies is going to be linked with the critical mass and high volumes of usage. In other words, we believe major market players are interested in the usage of DLTs so we expect them to promote it among their clients and counterparties making it easier to access for all interested market participants.

One of the underlying issue relate to how the payment process is organised, who defines the access to the DLT, what is the new remuneration schemes, who is the owner of the intellectual property, what are the counter-powers; that is why the DLT is called disruptive after all.

<ESMA\_QUESTION\_DLT\_11>

##### Do you see any other potential risks? Please explain.

<ESMA\_QUESTION\_DLT\_12>

Yes, we do.

In fact, at this stage, it is nearly impossible to envisage new developments that may come from the application of the technology, be it from analysing trades to producing benchmarks, creating new services or derivatives. One simply needs to imagine what would be the possibilities if all securities were offered only in digital form or if clients were all ready to handle their contracts only via web-based solutions.

Some other risks may arise during the DLT lifecycle. In particular there should be rising of awareness on the need for standardization.

The risk of technology misalignment and varying DLTs interpretation / understanding by different market participants is being offset by industry consortia (EBF, R3CEV, PTDL, Z/Yen, Fix Trading organization, other blockchain working group).

<ESMA\_QUESTION\_DLT\_12>

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

<ESMA\_QUESTION\_DLT\_13>

Market participant’s clearing and settlement functions are built on trust and confidence that are long to gain easy to loose. We should be aware of the potential benefits of these new technologies and be prepared to make the necessary regulatory adjustments if safety and integrity of such technological solutions are proven and their potential benefits found to be in the public interest. One of the difficult issues to solve is to ensure that the potential robustness of the system is ensured. Who will be able to test the system and ensure it is “bullet proof” to manage volatility and is able to withstand hacking or cyber attacks or that there is no flaw in its conception and respective inherent features? Any further corrections will add unnecessary complexity and may not be able to correct underlying issues in an effective and efficient way.

A centralized, formal and systematic risks assessment initiative should be duly conducted. That is why we believe that, as a risk mitigator, there must be an appropriate level of capital commitment behind each initiative in the form of prudential capital rules in line with the banking or insurance sector. This initiative should produce recommendations for risk mitigation of the systemic risks common to all participants and recommendations for risk mitigation methodology applicable to each participant.

As far as it concerns cyber risks, this could potentially be addressed by building bank-grade tested DLTs using permissioned ledgers.

Regarding the operational risk, necessary procedures should be in place by a trusted DLT operator for testing and verifying smart-contracts.

What is certain is that banks will require new extremely qualified profiles of employees in this regard (e.g lawyers who understand and write DLT / smart contract code).

<ESMA\_QUESTION\_DLT\_13>

##### 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, we do. Scenarios 1.2, 2 and 3 are the most likely for DLT adoption.

1. For the scenario 1.2, we feel this is where banks can extract more value from a DLT application in OTC derivatives. Non-cleared EMIR derivatives, where a CCP does not apply, are the perfect environment for getting rid of confirmations, notifications, event reporting and contract sign-off. The DLT will play a CCP role for operational matters, not for credit risk during ticket life, but it is still a relevant advancement. Setting a single point of truth mitigates operational risk and costs of portfolio handling that makes this use case a real one to try.

2. For the scenario 2, it is yet quite unclear but some players and groups are trying this use case. We expect that CCP themselves will digitize their processes by DLT application and market members will try this use case likewise, mainly for reconciliation and margining. It does not imply getting rid of clearing houses as these bodies are still needed for credit risk mitigation, but for sure the scope of their activity will be reduced.

3. For the scenario 3, there is a main trend in applying DLT to cash products (and combinations of cash products) from primary to secondary giving that these products behave DVP clearing-wise. Also collateral management is a significant issue in the post-trade that can be eased through DLT that can manage amounts of cash and securities for posting and perform netting processes with no manual intervention.

We do note that these 3 scenarios are merely options within which DLT implementation solutions exist; however, there are many more alternatives or intermediary steps for these scenarios to become reality.

As stated in the ECB Occasional paper (No 172 / April 2016)[[1]](#footnote-2), other potential limitations to the DLT implementation are that the technology is still not mature enough to comply with the regulatory framework that has been developing over the last years. There is a need to clarify legal, operational and governance issues and this will take time to define and implement. One potential opt out is that, even if DLT does not formally comply with the prescribed legal solution, what will happen if in practice all market participants support the DLT-based process and its outcomes and, put simply, if SFD does not apply but that the DLT achieves similar results and market participants are “convinced” of the equivalence? Will SFD still need to be applied if it looses credibility?

<ESMA\_QUESTION\_DLT\_14>

##### 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>

We expect, as the theory goes, that the DLT will be valid as a single point of truth for the different transactions and to be valid as a trade repository where the regulators can connect and trace all the activity. With the implementation of the DLTs, we even expect to decommission some systems and eliminate some manual tasks we understand as a legacy taken from the way of operating in the traditional non-DLT bilateral markets. These rationales apply to all scenarios described. The scenario 1.1 seems to be the last one to be adopted, as efficiency and value gains are lesser as compared to other scenarios described.

Furthermore, as already stated in Q14, and bearing in mind the possible benefits rightly outlined in the discussion paper, there is still the need to clarify the legal, operational and governance issues but also to assess the scope and the way the technology works and can communicate and interface with other financial markets or provide useful information to these entities: CCP’s, regulatory authorities, etc.

In the end, the difficult task for a regulatory authority will not to be to assess the potential expected changes, but the unknown and completely disruptive change that may not come at the beginning of the use of DLT but rather, by surprise, once the tool is well understood by operators. Just like for other technologies, the tablets or smartphones or Facebook, Snapchat or Uber were not invented at the beginning of the Internet but several years down the road.

<ESMA\_QUESTION\_DLT\_15>

##### 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>

Yes, we do.

Although the possible use of DLT network as designated securities settlement systems (Scenario 2) may take a long time, the use of DLT networks to settle securities transactions that do not fall in the scope of Central Securities Depositories Regulation (CSDR) may prove possible in a shorter time frame (particularly in scenario 1.1). In fact, DLT technology may be a tool used to bridge the gap between peer-to-peer (P2P) financing and a wider market-based financing of SMEs, but the concept needs to be put on the market and be robust enough to be trusted by all stakeholders.

However, it is important to note that all use cases and scenarios to be applied have to comply with settlements regulations. The beauty of the DLT, however, is that certain solutions enable parties to settle P2P directly with no lag. DLT relies on multiple nodes that, after reaching consensus, unchain payments with no usage of current payment rails. We think that due to this nature, old procedures and certain regulations have to be reconsidered and even rewritten. Conclusions stated above apply mainly in case of a fully pre-funded model being implemented as a common market practice. Meanwhile, capital requirements for settlement members should apply but maybe in a new fashion where the immediateness of payment movements shall definitely lower these thresholds and levels.

<ESMA\_QUESTION\_DLT\_16>

##### 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>

The discussion paper highlights that DLT is not developing in vacuum, and that market participants will need to comply with the existing securities regulations such as European Market Infrastructure Regulation (“EMIR”), Market in Financial Investments Regulation (“MiFIR”) as it concerns clearance, Central Securities Depositories Regulation (“CSDR”) and the Settlement Finality Directive (“SFD”) in regard to settlement, as well as with national laws relating to, for instance, the recording of asset ownership.

This contrasts with other national proposals that would allow market participants to test certain products in a more relaxed regulatory framework.

However, one should not rule out the possibility that DLT is used fully out of the current regulatory environment and that by some trick at the end of the process there is a reconciliation with, for instance, Trade Repositories under EMIR. The equation is particularly difficult to solve as the larger the benefits (be they cash incentives or efficiency…), the more it is likely that stakeholders will be willing to switch to the most optimal solution even if it means finding tricks to meet regulatory requirement in the end (or simply pay a fine).

<ESMA\_QUESTION\_DLT\_17>

##### 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>

Yes, we do.

These are some of the cross use cases to be applied by any member interested in this technology. Both primary and secondary markets for securities are perfect environments to apply record-keeping. Custody business could be a good fit for DLT. Some basic custody functions can currently be done on a DLT, while handling complex events and multiple market practices will take years to develop. Depositary businesses including reporting needs are among main the candidates for DLT. The investor is more likely to proceed with early adoption as compared to the issuer.

The adoption of the DLT might be organized by securities type. But, most likely, the benefits will only materialize as and when the DLT does act as a safekeeping entity. In the other case (not acting as a settlements system), it would add another layer without taking away the necessity for the participants to reconcile against their custodian/ settlements system.

Nevertheless, DLT potential will also depend on the further harmonization of the different securities ownership, company and insolvency laws. We think that one of the key issues will be how to deal with very large volumes and execute high frequency of transactions. Indeed, if we consider that today the most advanced systems are able to trade at milliseconds and that under DLT there will not be clearing anymore (by design), will the system be able to manage all these transaction without in a reliable and flawless way?

<ESMA\_QUESTION\_DLT\_18>

##### 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>

To ensure compliance with regulatory requirements, some of the issues to address could involve how to:

* decide the rules for approving/rejecting participants on the DLT;
* decide the rules to govern the interactions between different participants;
* agree on liabilities of participants, including in the case of fraud or error, and correction mechanism as well as penalties in the case of infringement of the DLT rules of intellectual property.

Overall, we believe that, in most cases, minor regulatory adjustments will be required. Notably, it would suffice to ensure that the key elements to check are included in the process. Currently, most of the existing regulations do prescribe what needs to be checked but not how.

However, it is important to note that, we believe, it is not only a question of regulation, it is more about applying new rails to traditional business. Custody will be done in a new way of fashion and technology. Notarizing function and law tasks are subject to be validated by rules adaption, which are key for issuer services.

<ESMA\_QUESTION\_DLT\_19>

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

<ESMA\_QUESTION\_DLT\_20>

Yes, we do.

We would expect this could be the case as some projects are under PoCs at the moment. DLT by design is prepared to register every traded ticket in the market with all its details. And the regulator has to hold master user to access the DLT system and download all the information needed to control the whole trading activity. We hope the regulator understands DLT as a way to streamline the reporting process, which would be positively accepted by all stakeholders taking into account respective financial and non-financial burden market actors have to carry on nowadays. Perhaps, from a regulatory point of view, one of the issues to address is how to guarantee in the long run access to the underlying data amid forthcoming regular changes in the protocols, applications and respective standards. Besides, respective legislative initiatives on the European level are needed in order to clarify which regulators have which access to what information in a cross-border setting.

Furthermore, DLT may also be used for regulatory reporting in the area of voting rights, ownership structures and tax data.

<ESMA\_QUESTION\_DLT\_20>

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

<ESMA\_QUESTION\_DLT\_21>

In principle, all data is going to be on the ledger. All traces can be seen digging in the blockchain, from the origin to the destiny of the funds and the smart contract functioning as a whole. It is only a matter of information representation.

To ensure the possible use of the DLT for regulatory reporting purposes, some of issues to address involve how to:

* decide the rules for approving/rejecting participants on the DLT;
* decide the rules to govern the interactions between different participants;
* agree on liabilities of participants, including in the case of fraud or error, and correction mechanism and penalties in the case of infringement of the DLT rules of intellectual property.

<ESMA\_QUESTION\_DLT\_21>

##### 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>

Yes, we do.

We understand that some start-ups are testing issuer services as bondholder registry, corporate events and issuance registry in primary market. In our opinion, they are very unlikely to succeed as long as they are not backed by a large (or multiple) intermediary(-ies). The question of trust will prevent any solution to become mainstream in such context.

We also believe the investment funds market could be an obvious candidate for DLT in many areas of the chain of intermediaries.

<ESMA\_QUESTION\_DLT\_22>

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

<ESMA\_QUESTION\_DLT\_23>

We believe most of the possible regulatory obstacles have been correctly identified by the ESMA. If certain rules are not reconsidered and even redesign, the implementation benefits resulting from full DLT implementation will be limited.

<ESMA\_QUESTION\_DLT\_23>

##### 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>

Yes, they should at least to ensure a level playing field and that new operators, if any, are not prone to add new systemic risks.

Overall, we should be optimistic that the range of new technologies holds the promise of providing more robustness, security, resilience and information. We cannot afford to assume that the change necessarily equals to greater risk. At the same time, one needs to be realistic as the existing infrastructure offers, in most cases, robust, trusted and largely efficient solutions. It means that DLT has to provide extra added value as compared to current solutions to become the new normal.

Much will depend on the technology itself, its scalability, its level of maturity, the controls and environment surrounding it, standardisation and accessibility of/to transaction data, the quality of management and governance and, probably, the new business opportunities that could be developed around it.

In this context, the regulators should proactively promote and participate in initiatives for the preparation of scenarios for regulatory frameworks adequate to support the adoption of Distributed Ledgers and the co-existence with the more traditional processes and technologies.

This should be done in an environment where trust is build and ensure that there is a prudential level playing field between market operators: similar activity and similar capital. Any innovative solutions provider that offers services of a regulated nature, such as banking, credit, settlement, custody, etc., should be subject to the same regulatory supervision and requirements as current providers of the same services.

<ESMA\_QUESTION\_DLT\_24>

1. ECB, Distributed ledger technologies in securities post-trading, No 172 / April 2016, <https://www.ecb.europa.eu/pub/pdf/scpops/ecbop172.en.pdf> [↑](#footnote-ref-2)