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Subject: Final EBF draft response to the ESMA Discussion Paper on the Distributed Ledger Technology Applied to Securities Markets

Introduction

The EBF is interested to investigate Blockchain / DLTs as a smart way of boosting innovative solutions for multiple use cases in different business lines and with several purposes, both for new revenues enhancement and processes streamlining.

However, it is fair to mention that the usage of these technologies is premature for massive adoption and before setting into production we need to be sure that the DLTs-of-choice are bank-grade, scalable and able to resolve both privacy and security issues.

We are also in agreement that opportunities and potential risks have to be thoroughly analysed. However we feel that the DLT will offer a number of benefits once the vital pre-requisites have been met. We believe that the DLT can have a considerable impact on existing banking industry infrastructures, roles and functions of financial intermediaries, back office related securities processes, communication, interoperability and competition.

The main business lines where we find more applications for the blockchain are International Payments, Global Transactional Banking (mainly Cash Management / Cash Pooling and Supply Chain Finance) and also Capital Markets using smart contract and redesigning cash products.

In a more infrastructural angle we are interested in projects like cash on ledger for micropayments, settlement coins to get rid of cryptocurrency usage in different blockchains and smart payments applied to payrolls, unbanked/remittances/government bonifications, etc.

We believe there are some guiding principles which are helpful to keep in mind when assessing the legal and regulatory considerations relating to DLT. These are set out as follows:

1. A flexible and pragmatic approach – As noted above, DLT is at an early stage of development and deployment. Therefore, it is important that any regulatory approach to DLT does not implicitly limit or constrain firms' ability to test and develop DLT solutions. Any specific regulatory response to DLT should be fully considered and highly informed, formulated in collaboration with the industry, demonstrably necessary based on evidence, and proportionate to the consideration being addressed. Furthermore, if a situation arises where the use of DLT could pose a challenge to compliance with a certain regulation, we would advocate that policymakers are pragmatic in resolving such situations; the possibility of DLT not fitting within existing regulation should not necessarily be viewed negatively, given that the current regulatory framework has been constructed without taking account of the development of DLT.

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2. Regulate the specific application and not DLT – In principle, DLT should be recognised as a technology which can be used as a platform on which financial services activities can be undertaken, rather than as an activity in and of itself. As a consequence, while there may be aspects of the regulatory framework relevant to DLT as a technology platform, this is distinct from applying a regulatory framework to the regulated financial activity which utilises DLT.
3. Furthermore, the potential uses for DLT are numerous and diverse. The regulatory framework needs to be sufficiently cognisant of the diverse potential applications of DLT that are adaptable to operating across multiple activities and services. Consequently, the adoption of a "one size fits all" regulatory framework for DLT is unlikely to be effective or proportionate.
4. Equally, it is important that unregulated functions do not become regulated solely as a result of the deployment of DLT. While it may be the case that DLT could be used to perform an unregulated function in an inappropriate manner, any regulatory action in such cases should be determined on a case-by-case basis, and the use of DLT per se should not be the principal driver of any such regulatory action.
5. Harmonised international approach – DLT by its nature is distributed. Existing public blockchain networks can be seen operating across many jurisdictions, as the technology is not limited by geographic boundaries or a single legal and regulatory regime. In order to provide an effective regulatory framework in response to DLT developments, that framework should be based on harmonised international standards rather than on local or regional requirements.
6. To the extent that DLT forms the basis for a market infrastructure, for example, ESMA should be mindful of existing global standards and bodies, such as the CPSS-IOSCO Principles for Financial Market Infrastructures (PFMIs), which may provide a useful supra-national framework for determining the appropriate regulatory construct.

However, it remains essential that in any case potential adaptation of current regulatory framework does not contradict the underlying principles, nor weakens financial stability.

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?

Yes, overall we agree with all the benefits explained in chapter 3. We think that the clearing and settlement chapter is the most important one as the DLT has the 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 traditionally based on centralized, unencrypted hub and database architecture may appear expensive, not so efficient and, in some cases, vulnerable to the operational failure and cyber-attack, but the levels of performance and reliability are nevertheless extremely high because both settlement fails in payments or in securities transfers are not frequent (largely below 1%).

It is true that because of the evolution of the markets characterized by an increasing level of interaction between stakeholders, market segments and geographies, 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 and face the complexity that features capital markets.

We believe record of ownership and safekeeping of assets, reporting and oversight, reduction of counterparty risk, and efficient collateral management may be significant. In order to reach their full potential stakeholders will have to agree upon a set of similar rules in terms of processes, communication and protocols. Until this happens, there are interesting initiatives that are already working on solving some of the problems generated by legacy systems.

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 point 21 regarding the necessity of relying on CCPs in derivatives trades due to their prominent role in maintaining derivatives portfolios, managing risks and accordingly margin calls and collateral deposit during the trade lifecycle.

Furthermore improvement of CA processing due to Smart Contracts implementation is a major DLT opportunity.

Potentially DLT could support the threshold reporting in area of company ownership and voting rights.

In order to provide additional details, we would like to comment on the consultation chapters as follows:

Clearing and settlement:

It is acknowledged that shared, distributed ledgers could significantly reduce clearing and settlement costs. It is however possible that existing clearing venues could provide the same degree of cost saving and efficiency by improving existing technology and processes, so DLT may simply act as a driver to innovation and cost reduction. Further, the rollout of T2S in Europe may mean we are less likely to see clearing altogether in its current form.

The speed of the network depends on how the checks and balances would be realized in the DLT. It also depends on the kinds of transaction processed, the validation processes and the way in which risk models are implemented. A conservative risk assessment could slow down transactions as processes might be needed to link the digital and the real world.

Although we agree that the DLT could speed the clearing and settlement of financial transactions, the more important benefit than speed would be that the reconciliation processes would be faster or even unnecessary which would render the process more efficient. The speed of the transactions would in fact also depend on the terms determined by the parties to the trade (agreed settlement cycle, need for liquidity etc.). We agree that certain processes in the settlement chain (e.g. dependencies on settlement batches, manual processing, and reconciliation) could be eliminated by using the DLT and can therefore speed up transactions, particularly cross-border. However, at present this will not necessarily lead to the shortening of settlement cycles down to T+0 or even instant settlement (please also see further below in 3.8), as there are other dependencies that will not be easily solved in the short term.

Record of ownership and safekeeping of assets:

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The EBF believes that a core issue is the need for new standards, such as universal identifiers. The challenges here are probably much greater than any technological challenge. For example, the ability to manage chains would allow the storage of Ultimate Beneficial Owners (UBO) information through the chain, without the need for full account segregation. The DLT will thus achieve transparency and investor protection without the cost related to all accounts normally kept in the chain. However, in jurisdictions where safekeeping of securities is dependent on a record in a bank account, legal changes may be necessary in order to enable the record of ownership of securities in a DLT.

Reporting and oversight:

“This could be beneficial to reporting officers, risk managers and regulators, provided the necessary safeguards are in place”¹: a reliable security and privacy system should be implemented. By posting information to a DLT and giving access to the regulator, trade repositories and reporting lines to trade repositories and regulators could become superfluous. This is particularly true of all information included in the DL and provided that the necessary data protection requirements are met.

The EBF believes that this is one of the most important benefits of the DLT. We therefore suggest modifying the conclusion drawn in para 111 of the Discussion Paper (“there would still be a need to have a trade repository”). This would only be the case for transactions on legacy systems and for information that the supervisory authority deemed necessary but which was not stored in the DL. Furthermore, we believe that the roles and functions of financial market infrastructures could be fundamentally changed by the DLT (like the roles and services of banks). This also includes services related to reporting. Trade repositories could adapt their services to DLT-based environments, too.

Counterparty risk:

Counterparty risk exists where the trading parties conclude a trade but settlement of the transaction occurs at a later date (pre-settlement risk). It describes the risk that a counterparty in a financial transaction will not deliver a security or cash as per the agreement and the variation risk regarding the value of such obligation over time. In a DLT environment counterparty risk would continue to exist where the trading and settlement of a transaction did not take place in the same DL, which would typically be the case when pricing was not determined bilaterally but on a trading venue. In cases where the trading, clearing and settlement occur at the same time, no counterparty risk exists.

Furthermore, it should be borne in mind that trading and settlement can work on fundamentally asynchronous systems. If a participant did not possess the assets it agreed to deliver (trade), the DLT would not execute the transaction and the counterparty risk would shift not to the clearing phase, but to the completion phase of the transaction (settlement) even if real-time settlement or a very short settlement cycle had been agreed on (settlement risk). If the trading parties, however, agree on a certain time period for settlement (settlement cycle), counterparty risk can be created: the DLT could

- Enable trading parties to agree on very short settlement cycles or on instant settlement (spot transactions) thus limiting the counterparty risk,
- Eliminate certain impediments in the actual handling of settlements that exist in legacy systems especially in a cross-border context.

¹ ESMA DP on the DLT applied to securities markets, Sect. 3.3 on reporting oversight, page 11

However, these opportunities in the DLT will not necessarily lead immediately to securities transactions actually taking place in a real-time or T+0 settlement, since this shift to a different settlement cycle will also depend on the parties' agreement or needs.

Efficient Collateral management:

In theory, DLT could drive significant improvement in both collateral management and the amount of collateral required but would require a large amount of agreement on standardisation and normalisation of static data between participants in the system. However the counterparty risk cannot be fully eliminated by the DLT. Whether the counterparty risk is removed is dependent on the type of the transaction. However, where the DLT leads to shorter settlement cycles the need for collateral will also be changed. We believe that a DLT environment would allow for tracking collateral postings including the knowledge of the underlying beneficial owners.

Availability:

"Continuous basis"²: For a certain period of time, DLT systems would need to interoperate with external and legacy infrastructures, like T2S for securities settlement and like RTGS systems for cash management.

However, the continuous availability could be seen as a benefit in the long run.

Security and resilience:

The security of DLTs has not yet been subject to significant, broad-based testing in the industry but, in theory, the benefit of distributing data across a network of connected servers, as opposed to a centralised entity, arguably makes a cyber-security breach both less likely and less effective, primarily as there is no single point of attack. The EBF notes that in circumstances of wide adoption and uses of DLT, if a single or multiple DLT provider were to suffer technological fault, hacking or default, the consequences could be severe in the market, and so it is critical that any DLT has cyber-protections in place with strong encryption and cryptography protecting data. However, the EBF also notes that this is not an issue specific to DLT. Cyber risks are already present in existing market infrastructures and Blockchain-based systems have (to date) a strong cyber-security record.

We also believe that the protection of the data is only as effective as the security of the Cryptographic keys used, therefore, the Protection of all private and secret Cryptographic keys are paramount to reduce fraud.

For the resilience it is important to back up all keys, or ensure SEEDS that establish hierarchical deterministic wallets are backed up. Failure to complete this would cause difficulty in providing signatures for transactions within a DLT

An important aspect to note is the effective management of decentralised node collisions. We believe that as part of a DLT rollout, there would need to be very clear rules governing the management of collisions, to ensure the effective running and growth of such a ledger. What could cause significant impact, is the inability to remediate quickly from a 'fork' in the ledger (at multiple nodes).

² ESMA DP on the DLT applied to securities markets, Sect. 3.6 on availability, page 12

Costs:

The EBF believes that reducing duplicate ledgers and associated reconciliations should deliver cost savings. Much of this could possibly be achieved through improved business processes as much as through technology. However an accurate estimation of all the implementation costs it is still not possible at this stage.

Markets need to have a sufficiently advanced understanding of the potential solutions and their underlying technologies to estimate the implementation cost of a solution in a specific context, especially when considering the core post trade functions. This is not yet the case. In the short term, the current T2S roll out and the significant investment this required will act as a barriers for DLT to be adopted by some entities, so we insist that any initiative to implement DLT should not be mandatory.

Other possible benefits:

The benefits described in para. 28 do not seem to refer to Post Trading activities (pre-trade information, buy and sell interests). We therefore agree with the conclusion of the last sentence in para. 28 that this part of the trade lifecycle is not the main focus of the current market initiatives around the DLT so it should not be the main focus of ESMA at this stage.

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

We consider that DLT could drive a significant harmonization of procedures and regulations across securities types. Regarding the Post Trading sector we believe that other potential benefits exist:

- Claims on DLT assets could be documented,
- Proxies could be applied to all processes which could change the continued manual nature of the processes and the need to distribute & exchange information to and with a large number of underlying customers,
- Corporate actions could be enhanced likewise as well as General Meeting's organisation. Much of the information needed to process corporate actions could potentially be handled by smart contracts. These are most likely to be implemented in newly issued bonds and certain new share instruments.
- Streamlining the New Issue (Primary Bonds) Market
- Asset servicing (e.g. coupon payments, covenants, dividend payments, administration) in general.
- Tax issues could be handled individually according to the actual holding of the transparent end investor etc.
- We estimate that many handling processes could be automated or simplified and the associated costs could be reduced significantly.
- No reconciliation would also mean no keeping of records and accounts – in fact, the DLT is the record. Instead a structured access to the DLT would have to be managed. As the DLT would render reporting to supervisory authorities superfluous, it would also render reporting to clients superfluous as they would gain continuous access to their wallet.

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- At the auditor level, the DLT can provide auditable data, for internal and external audit and for the regulators. At the client level, if banking institutions couple the DLT with data analytics procedures, the DLT could provide a hub of information for clients that can have access to the entire lifecycle of the securities.
- Potential to remove clearing costs and reduce settlement costs
- Potential for shared IT costs, as more assets are on the same ledger

Besides the benefits regarding the Post Trading sector itself, we imagine that all electronic trading activities would benefit from the ability of the post-trading sector to apply the DLT but this is outside the scope of our response to this Discussion Paper.

Likewise, we could imagine new securities issuances and the creation of new products that are currently not traded due to significant financial engineering innovation costs as a result of the regulatory framework or limited to issuance by existing legacy infrastructure. We also see a potential for the further development of existing products like DRs, ETFs and other similar types. Moreover, securitised assets that are not considered as securities in the current regulatory environment, but could be made transparent, could become available in a DLT, e.g. syndicated loans or private equity. Applications for the management of investment funds are a further possibility.

We could imagine that there is a benefit in applying smart contracts not only to derivatives transactions but to cash products. Issuing smartbonds or smart equities can ease primary issuance processes, which nowadays are bulky and manual and also cover corporate actions in all product lifecycle.

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 activated in the DLT and extended to the whole market. These are markets where DLT may be a powerful tool, contrary probably to equity securities or transactions that are both smaller and much more frequent, thus not optimal for DLT and above all for open DLT (namely 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 DLT may prove a beneficial tool for the fund industry specifically for transfer agents whose task is to record funds units with investors.

DLT could provide a world-wide safe-keeping registry of assets and their respective owners eliminating the need for case by case verification of entities. By validating an entity through one node of the system, the whole DLT ecosystem can verify transactions and validate the aforementioned transaction components minimizing cost & effort related to proper KYC.

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?

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. In other cases, where there are multiple 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 record can serve as the source of necessary information, eliminating the need for reconciliation and increasing the post-trade processing efficiency and security.

If the DLT would not apply across the entire lifecycle of securities, it would imply more interfaces (process-wise and technological-wise) between the existing and the new models, which would increase cost, risk, and probably complexity in relation to full deployment of DLT. However, positive benefits can be obtained even in cases of partial adoption. There needs to be an evaluation of the end-to-end process, including money on ledger and the interoperability of the technology.

In fact, in order to launch the Minimum Viable Product (MVP) and/or a 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.

It is important to note that DLT solutions are not yet at a stage where they are usable in a full enterprise mode, but will develop over time and spread gradually across markets and instruments. As a general principle, the more processes are DLT-based, the more benefits will increase exponentially. In an ideal world the whole range of processes will have been transferred to DL technologies to achieve maximum benefits.

Technology benefits are cost sensitive. While it would be ideal to apply the DLT to all flows, an alternative would be its application to areas where costs are highest – issuance, safekeeping and records of ownership (including ownership transfer).

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.

The EBF notes that DLT systems are being considered primarily in the context of post-trade clearing and settlement and the automation of back office functions, such as corporate actions. Alongside the aforementioned benefit of reducing reconciliation times, a further impact in this context could be the reduction of liquidity risk and the cost of liquidity, which could have a positive effect on the balance sheets of major institutions. Given economic and financial conditions, this would be a positive impact.

The EBF takes the view that there are significant additional long-term impacts across a number of internal business processes that could become automated as a result of DLT, primarily in terms of driving cost savings and enhancing process soundness. In particular, we anticipate major changes to the current functioning of central security depositories and central clearing houses. Also that many back office process could undergo full automation.

We believe much will be dependent on the depth and 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 is the case for some types of derivatives. In that scenario, there will be reduced impact on the overall practices at each layer.

An alternative scenario may 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. 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.

In terms of product we do not expect that high frequency traded (or exchanged) products are suited to the DLT. Instead, we also expect that derivatives, insurance contracts and some fixed income products may be prime target for DLT, besides solutions for SMEs (access to funding, distribution of dividends, etc).

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

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.

Drawing a timeline is a difficult exercise, it may take some times before market participants reach the level of “conviction” necessary 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.

In our view, three basic scenarios of post-trading activities in securities markets need to be considered. These are likely to evolve in a phased approach which means that the timeframes described below should be added together:

A. Securities instruments/products will be issued, offered, traded, cleared and settled solely in a DLT landscape, starting at a defined date in the future.

Prerequisites/working assumptions:

- Permitted DLT
- Unregulated/niche products likely to be adopted by the DLT first
- Post-trading processes (clearing and settlement) are executed/settled by a defined group of DLT subscribers/participants. Later, issuance and pre-trade could follow.
- Instruments/products have to be defined (most likely starting with non-complex products. Some members believe, however, that non-cleared EMIR derivatives could be DLT products in the first stage (i.e. cross-currency swaps and non-eligible exotic products depending on regulatory evolution). Cash products could be in second stage.

Estimated timeframe for a technical solution: 1-2 years (2-5 years for internal bank-specific solutions could be added).

In consequence, only DLT subscribers/users will have access to (and potential benefits from) such a scenario.

B. Opening up to other products and/or groups of DLT participants

Estimated timeframe for a technical solution: 3-5 years (5-10 years for national implementation or specific cross-border activities).

C. Existing securities/instruments/products are transferred to the DLT

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We understand that several technical possibilities exist to transfer existing instruments to the DLT (e.g. tokenisation of already issued securities). Irrespective of the technical ability to transfer legacy securities to the DLT, legal and regulatory changes are necessary.

Estimated timeframe for a technical solution (provided legally permissible): 5-10 years (10-15 years for cross-border implementation of current processes).

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

There could be potential benefits in all the items defined in the benefits points in the document (chapter 3) but mainly in settlement/clearing, counter party risk reduction, 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 from building 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 for reporting of records of transactions to authorities be they ESMA, EBA or EIOPA to name a few

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 bene-fits) and explain where you stand in terms of practical achievements in relation to your objectives.

Whilst the EBF is aware of a number of applications in development, it is not in a position to comment directly on its members activities.

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.

Overall we agree about the issues pending of solution when applying DLTs.

Scalability

Scalability currently remains an important issue and in certain cases some challenges remain, as to whether DLT has the bandwidth to handle large volumes of time-critical transactions across multiple institutions and jurisdictions. However, we believe. DLTs have the potential to be more scalable at a lower cost than current infrastructure. The EBF acknowledges that significant steps have been made by other market entrants since the emergence of BitCoin. BitCoin processes 7 transactions per second, as compared with later market entrants such as Settle which announced they can process 100s of thousands of transaction per day, and Ethereum which announced they can process 100s of thousands of transactions per second.

As such, the EBF believes that research and testing needs to be carried out to assess the various available consensus algorithms and validation methods and that testing will ultimately need to be conducted in production-like conditions in order to assess the robustness and efficiency of DLT in exceptional scenarios and in times of stress. However the EBF acknowledges that improvements and innovation in scalability could in the future

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support more commercial deployments of DLT and a move away from proof-of-concepts and controlled experimental deployments.

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 and efforts should be made by all participants to establish a safe governance framework as described below.

Governance

The EBF agrees that, particularly in relation to a 'permissioned' network, the governance framework and legal architecture of that network will be vital and will need to address a number of legal, operational, risk and regulatory issues. In this regard, the BCBS-IOSCO Principles for Financial Market Infrastructures are likely to provide a useful international framework for the formulation of such architecture, although clearly adaptation would be required to accommodate the distributed nature of the DLT network (rather than in a typical FMI construct where a market infrastructure is a separate, single legal entity).

The EBF notes that a permission-based system requires rules to approve/reject authorised participants. Such rules may include minimum capital requirements, conduct of business rules and risk management processes. Rules to govern interaction between participants, both 'permissioned' and 'non-permissioned' will also be necessary, such as the liabilities of respective participants, penalties in case of infringements, the IP attached to the technology and the territoriality of the law.

The EBF would also stress that there needs to be clarity on the entity or group of entities that would be held liable for the activities of the network vis-a-vis third parties (including regulators). This may require an entity (possibly a CSD, although there are doubts as to a CSD's compatibility with the DLT model, due to their inherently 'centralised' nature) to assume management, trust and governance of the DLT record.

Privacy

Issues that arise in respect of privacy are dependent on a number of factors including the nature of the data stored and processed, the location of such storage and processing, the method of storage, arrangements in place between those in possession of the data and how accessible the data is and to whom. There is a clear jurisdictional overlay to these considerations which means potentially differing legal and regulatory frameworks governing the data privacy aspects of any cross-border DLT network. In addition, the existing European data privacy framework has not been constructed with a distributed model in mind (and, to some extent, is predicated on exactly the opposite model). This means that there are aspects of the EU data privacy framework which are challenging for developments in DLT. The EBF identifies in particular:

- Data privacy laws tend to allocate responsibility according to control rather than knowledge and are quick to identify data as "personal" and therefore subject to regulation, despite technical measures to protect the identities of data subjects. Consequently, DLT networks are likely to be seen as distributing personal data across a wide range of participants, subjecting the network to multiple differing data privacy laws, raising legitimacy/fairness issues and running up against international data transfer restrictions. In some jurisdictions, there is scope that this might be resolved through an "informed consent" process from users.

- Data privacy laws - including the GDPR - are unsophisticated in their approach to responsibility for shared systems and it may not always be clear when one participant will be held responsible under the relevant laws of its own country for problems (for example, security breaches or deliberate misuse of data) affecting or caused by other participants in other jurisdictions. Even where there is no legal responsibility, there may be reputational damage for institutions deploying systems that encounter such problems.
- Data privacy laws are hostile to the idea of indefinite retention of personal data, which runs contrary to a fundamental aspect (the indelible record) of DLT systems. Technical solutions may need to be found to address this "right to be forgotten".
- There is an increasing tension between data privacy law and governmental rights of access to data, particularly in cross-border networks (see, for example, the Schrems case and the demise of the US 'safe harbour'). As noted above, DLT networks may well expose participants' data to the data privacy laws of many countries. The possibility of governmental access in many jurisdictions where the law is somewhat different from the data owner's home state may require legal solutions which even very clear consents may not always overcome.
- Subject access (and other data subject) rights pose a particular challenge where data is distributed and system participants may not be able to identify the underlying data subjects. This is one respect in which the GDPR will assist, by making clear that a participant need not respond to a subject access or similar request if it cannot identify the subjects of the data that it holds. Under current data protection laws the position is less clear.
- The application of existing privacy and data protection laws in the DLT environment will require further consideration. For example, the application of EU data protection law (and the national law regimes of EU member states derived from EU law) will depend on, among other things, identifying what constitutes personal data and who is/are data controllers as against data processors.

The EBF would emphasise however that despite the above challenges, DLT systems do not necessitate a 'public' network and so privacy may be an issue that is easier to overcome. Through the use of public/private key cryptographic techniques, access to data on the DLT could be granted or obfuscated depending on the user (i.e. so that only the relevant parties to a particular transaction would have full visibility to the relevant transactional data whilst other users would only see an obfuscated or masked version). In addition, data shading techniques could allow for a minimal amount of required transactional data to be held at each node (to reduce storage requirements and increase transactional speed), rather than the full history of the entire ledger for the DLT in question.

Interoperability

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).

Making different systems interoperable will help avoid manual cross-system reconciliations, an underlying objective of DLT. In the EBF's view, operating costs of DLT systems are likely to be lower due to wide applicability, but the issue of how DLTs interact with legacy systems as well as other DLT systems using differing platforms is one of the questions that the projects are exploring. Migration of all outstanding security issuances to a distributed ledger is not thought realistic, however an interim dual system with transactions being

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settled both in traditional and DLT systems by their current operations appears more feasible (a 'step-wise' scenario).

The EBF acknowledges the uncertainty around whether the securities industry is best served by a single Blockchain or multiple forms of DLT (which in any event may be an outcome viable only in the longer term). If connecting a DLT to an existing legacy system (e.g. SWIFT), the interoperability problem may be reasonably straightforward to solve through the deployment of an application programming interface (API). The task of connecting two Blockchains built using the same underlying protocol (e.g. Ethereum) may be similarly straightforward to solve. A more complex issue is the task of connecting different Blockchains built using different underlying protocols into a seamless, interoperable network. The EBF understands that the Interledger Protocol is currently working to solve this "cross-protocol interoperability" issue.

DVP/Central Bank Money

We agree that a number of technical and legal issues are raised by this topic but we are very confident that they can be resolved. In order to settle central bank money, the ECB and the central banks will have to work on a solution for central bank money payments in a DLT. To our knowledge, the ECB is about to set up a DLT dedicated task force which should also cover the issue of central bank money.

Our members are of the opinion that payments for securities settlements are generally also possible in commercial bank money (like ICSDs). Several solutions seem therefore possible:

- a) A national central bank issues central bank money in a DLT
- b) A bank allocates certain funds for DLT payments in its account with the national central bank, tokenizes them and transfers such claims into the DLT.
- c) Third parties use such claims in a DLT for payments.
- d) ICSD commercial bank money in a DLT environment.

There can be certain scenarios and legal frameworks where central bank money are not settled. In case no central bank money is available on the DLT from the central bank, banks could facilitate DLT payments in the form of credits to their customers. In order to enable innovation and to avoid the development of fiat currencies in other (third country) markets for the purpose of DLT payments, the EU regulators should be interested to support a practicable solutions along the lines of a) to d) further above.

Recourse mechanism

The DLT can be viewed similar to other applications – business flows should be considered in details before automated smart contracts are created. While recourse mechanism is required it should be borne in mind that a significant part of activities (e.g. trading) can take place off ledger. Consequently, this question is more related to the scenario – how the DLT delivery reflects the real world (and all legal implications) rather than automated instances of small programs.

A corrections will most likely not take place in a cancellation of the DLT transaction as it is immutable but by mutual agreement of the affected parties' off-ledger. They will initiate a counter transaction in order to correct the flawed record.

It will be, however, important what the governance framework of the DLT will provide for. Questions need to be addressed such as how a DLT/algorithm can be changed afterwards across all participants (e.g. by counter-transaction), will there be a liable entity etc. The questions ESMA raises in para. 33 of the Discussion Paper would have to be addressed in the governance framework of the DLT.

Position Netting

In our opinion this could be resolved via services provided within the DLT ledger. Consequently, nothing should stop parties from netting execution similar to existing providers. We believe, however, that SFTs should also be mentioned in para. 34 of the Discussion Paper.

As mentioned in the answer to Q1, introducing a real time gross settlement model (including real time cleared secured financing / SFTs) would be a fundamental shift in the operating basis of global financial markets and will, inevitably, give way to increased systemic risk.

Absence of netting for spot transactions would increase significantly the number of settlement instructions and the size of the ledger.

Legal issues

A key legal consideration is the corporate, property and securities law analyses of the issuance, transfer, clearing and settlement of securities and financial instruments within a multi-jurisdictional DLT network. This gives rise to a number of questions which will be important for any DLT network to answer including the characterisation of the asset which is issued in the DLT network (and the legal consequences which flow from that – such as the ability to transfer ownership and how, the treatment for tax purposes, etc), determining which jurisdiction's (or jurisdictions') laws govern the ownership of the financial instrument, whether and where there are 'accounts', what rights may be granted over those accounts, and so on. These considerations are highly fact-dependent and may be further complicated by other factors (for example, regarding the question of location of an account, how is this affected where a participant hosts their DLT node in a cloud located in another jurisdiction?). Such considerations are difficult to address in the abstract, however the EBF would emphasise that these issues are some of the most critical and difficult structural challenges that the use of DLT networks in the context of securities trading, clearing and settlement will need to overcome.

However, in order to enable technical innovation in the EU it is of absolute importance that EU-legislators and regulators have a flexible approach regarding the DLT. We agree that the objectives and safeguards of the existing regulatory framework need to be maintained and should be taken into account when further developing the DLT. The EBF is however convinced that changes to the current legal texts can be necessary to avoid a limitation of its deployment just for the reason that the wording of the law does not reflect the new technical terms and opportunities.

It should be kept in mind that technical changes with the benefits described in the Discussion Paper and further above should be supported and not hindered by outdated legal or regulatory provisions. Otherwise, we clearly see the danger that innovation will migrate into markets outside the EU. Proportionate regulation is key in our view. The usage of the DLT does not change this. As long as the necessary legal changes are not yet made,

the supervisory authorities need to interpret the existing law in the light of technical progress.

In our opinion countries that will adopt the DLT first could get a competitive advantage. While there are multiple open points with regards to regulation most of them can be addressed by regulators in cooperation with the industry as the technology itself does not necessarily change the objectives of the regulation. It should also be taken into account that legacy systems most probably co-exist next to DLT systems for a longer period of time. Prudent regulation will set the objectives without giving a preference to a certain technological system.

In any case, we believe that the DL technology is a global issue which should also be treated in a global context by regulators. The DLT is not limited to EU-markets and therefore needs to be addressed by EU-regulators and regulators of non-EU jurisdictions and global standard setters for regulation alike. Close alignment would be of great help.

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

A first challenge can come from the many protocols that may co-exist during a certain period of time: lots of different standards, protocols and even languages can complicate expected DLT adoption; that is why interoperability is key.

We also see a regulatory risk in the long term: after a careful assessment by regulators, DLT implementation needs regulatory backing and, specifically, we would need a legal definition. Otherwise, all these initiatives may turn out blurred and/or incomplete and the financial ecosystem 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 is 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: large number of trades, volatility. Additionally while DLT networks provide enhanced data integrity through their distributed structure, they also rely heavily on encryption and the protection of keys to secure their participants' data and to ensure fraudulent transactions cannot be perpetrated.

Some details will have to be worked when establishing a DLT, through a governance framework:

- The 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?
- The 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, etc.

Finally, 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 a classical permissionless approach there needs to be miners to support the functioning of the system. This approach has relevant costs (cost of the miners, computer power needed, cost of energy, what and how is designed the remuneration of the miners). That is one additional reason why we believe that clubs under permissioned-based approach will be the initiators of the trend. However, even in this case, there will be a need to take into account, among the others, the costs of maintenance of the systems, constant upgrade and incentives, etc.

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

The EBF also believe that ESMA should position the regulatory framework and interpret existing legislation for a reliable and mindful usage of DLT technologies.

There are multiple challenges and potential solutions to those:

- Technical challenges (scalability, privacy) are likely to be resolved by the industry.
- Governance challenges are more dependent on industry bodies, consortiums and emerging platforms that will regulate who can join them, what is the legal framework around it, if smart contracts can be enforced etc.
- Regulatory & intermediaries challenges are highly dependent on market authorities DL understanding, participation in new standards development as well as recognizing changing nature of regulators role – within DL regulators may not just supervise, but actively define rules and market practices.

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 widely. It is currently too early to outline concrete solutions to the challenges discussed.

Depending on the business case, the cooperation is needed of all parties concerned across different groups (including regulators) particularly, due to the required network effect, for wholesale adoption. Furthermore, there will be a need for standards enabling different DLTs to work together. From a settlement perspective, a T+0 settlement cycle might be considered unworkable without a very liquid repo market available alongside.

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.

Yes we agree with most of the risk detailed in the discussion paper.

The most important risks are associated with potential systemic impacts of cyber-attack risks and operational risks. In particular, on cyber risk, while ESMA's points are certainly relevant we would like to highlight the fact that existing applications have most of those risk points as well. Consequently, it may not be relevant to the specific DL, but to general network security, operational practices etc. We assume that permissioned ledgers are used across authorized financial institutions. Therefore we do not see the risk in the DL technology itself but in the vulnerability of the clients' (or end investors') access to the system. Cyber-attacks which are supported by certain states could also pose a risk. It should therefore be considered in the governance framework that not a single state can control the network or system.

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; e.g.: certain events that trigger market volatility have a reflection into DLTs. In other words, the gossip, rumours and market sentiment are always difficult to control but can lower its impact using DLTs and volatility can turn out in a more fact-based market variable. Also, information that causes volatility will be traceable, which makes the whole financial system more controllable and accountable.

The risk of unfair competition may also prove to be significant, particularly if DLT network participation makes it economically unviable for smaller banks to join the network.

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However this is a risk inherent to all industry innovation, not only DLTs. Anyway, in this particular case, we see an opposite force to that which is the network effect. The success of these technologies is going to be linked with a massive usage, in other words we believe players are interested in a major usage of DLTs so we expect them to promote it through-out clients and counterparties making it easier to access for all interested market participants.

Concerning the other risks (chapter 5.5), the EBF agrees with the issues regarding interconnectedness and the running of parallel systems. We do not however agree that the DLT would add layers of complexity for the supervision due to encryption technologies. Information in financial markets is highly protected, as markets rely on trust and information asymmetry. A highly protective governance framework needs to be established while the technology is developed. However, the gathering of or access to relevant information for risk management or oversight perspective should be improved through the use of DLTs. We see the challenge for the supervisory work not so much in getting the information but in their evaluation, making the right conclusion and taking the necessary action.

The EBF is of the opinion that the participants of the DLT will be different from supervisory authorities, with different levels of access to information, as participants will not be entitled to have a view on the transactions of other participants in a competitive environment. This condition is one of the prerequisites of the (permissioned) DL implementation in securities markets.

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

Not at this stage. Nevertheless there could be the risk of technology misalignment and different DLTs interpretation and understanding from the different market participants is being offset by industry consortia (EBF, R3CEV, PTDL, Z/Yen, Fix Trading organization, other blockchain working group).

Some others may arise during the projects lifecycle. In particular there should be rising awareness on the need for standardization

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

Market participant's clearing and settlement functions are built on trust and confidence. We should be aware of the potential benefits of these new technologies, and be prepared to make the necessary regulatory adjustments if their safety and integrity is proven and their potential benefits found to be in the public interest.

As far as it concerns **cyber risks**, this could potentially be addressed by building bankgrade tested DLTs using permissioned ledgers. The risks can be addressed if the DLT systems are designed to include a bulletproof cyber security infrastructure and hierarchized governance between stakeholders, reflecting the legacy structuration of securities markets. ESMA says that the technology itself is considered secure and has not been hacked to date. In fact, the main issue with regard to the security of the technology stems from the actual user. Moreover, in a permissioned system participants would probably only see what they are allowed to see, with a regulator holding a master key.

A key to a functioning DLT system would be the limited participation and the subsequent identification (KYC) process for those part of the system. This helps create a level of confidence and trust that no fraudulent transactions are being executed.

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The success of a DLT system also largely depends on the acceptance of a wider market; imposing significant conditions would not help increase the level of trust. However, a permissioned system needs to create transparent access requirements but, at the same time, sufficiently high requirements to deter parties with improper intentions.

Regarding the **operational risk** a control body could be established for testing and verifying smart-contracts. Banks will need new profiles in this regard (combination of lawyers that understand and write code).

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?

Assuming that DLT is possible to be applied in those scenarios: 1.2, 2 and 3 seems the most suitable ones.

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

3. For scenario 3 there is a main trend for applying DLTs 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 huge pain point 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 solutions for implementation of DLT exist, but there are many more alternatives or intermediary steps for these scenarios to become reality.

However it is important to note that from the implementation of respective DLT solutions redundancies can arise, namely at the risk mitigation level. So, either the implementation is rather cheap and simple from an IT investment perspective or the benefits will not cover the risks and costs that the technology, at this point, still has and needs to address in order to be adopted on a mainstream level.

As stated in the ECB Occasional paper (No 172 / April 2016)³, other potential limitations to the DLT implementation are that the technology is still not mature enough to comply with the entire regulatory framework that has been developing over the last years. There is a need to clarify legal, operational and governance issues and that will take time to define and implement.

DLT projects are currently being designed in a way that they comply with the regulatory framework. However, we believe the regulators should also be open to review the legal

³ ECB, Distributed ledger technologies in securities post-trading, No 172 / April 2016, <https://www.ecb.europa.eu/pub/pdf/scpops/ecbop172.en.pdf>

requirements on how to achieve a regulatory goal if a new technology allows for the development of a stronger, more robust, safe and more efficient market structure.

Essentially, we hope that the industry and regulators would collaborate on evolving the financial markets to suit the needs of market participants as well as delivering the objectives of regulators and policy makers.

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

We expect the DLT to 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 market. These rationales apply to all scenarios described. The scenario 1.1 seems to be the last one to adopt as efficiency and value is less than the other ones 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 how the technology works and can communicate and interface with other financial markets or provide useful information to these entities: CCP's, regulatory authorities, etc.

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?

The EBF believes that the DLT can generally be used for all of the scenarios and even for scenarios which are not described in the discussion paper. If the securities issuance processes basically remain the same as today (e.g. only tokenisation of securities for the DL), the DL users will either be CSDs or banks as settlement internalisers. In terms of today's definitions, scenarios 1.1, 1.2 and 2 all seem possible. Scenario 1.2 (acting as a settlement internaliser) is probable as one of the more likely solutions. This would be the development of a DL as a transaction management system interfacing with CSDs. It follows that settlement internalisation would be part of such a system.

It also seems possible for the DLT to operate as an SSS among the participants in the DL but not, however, to be designated as an SSS in the sense of Article 2 (2), indent 3 of the SFD. This would seem quite probable for instruments which are not settled on designated SSSs as of today. The SSS would be operated by all DL participants which are usually not CSDs.

Furthermore, the DL could also be regarded as a pure technical platform, so that it would not fall under the definition of an SSS.

Additionally, other forms of issuance are conceivable, leading to other concepts of or terminologies for "securities". This, in turn, may result in scenarios where the DL will not be de-fined as an SSS and thus neither the SFD nor the CSDR would be applicable.

We therefore see the risk that an overly strict construction or overly narrow interpretation of the CSDR or SFD rules could result in the technology drifting towards more liberal and innovative markets. As long as no adaptation of the regulatory requirements has taken place, ESMA should consider interpreting the existing rules in a way that allows the DLT to develop. Such interpretation of the rules should not banish or scare away the possibilities

of the DLT regarding settlement activities. This would mean that the objectives remain the same (e.g. the moments of finality must be defined in the DL governance like in an SSS under the SFD). However, it could be possible that the application of the DLT modifies the market setting and processes in such a fundamental way that the foundation for certain rules is not suitable any longer although the wording of the rules still seems to be applicable. An SSS is, inter alia, an arrangement between three or more participants, excluding the system operator of that system. A DL appears to fit into this structure. Nowadays, the system operator of the SSS operates a central system and keeps a centralised ledger of the securities. This would be entirely different under the DLT. CSDs ensure centralisation of safekeeping of securities, but if the DLT is adopted by markets, it would allow financial institutions to manage trustful ledgers independently of CSDs. Moreover, the DLT is a record that is complementary to account management provided by financial institutions.

The DLT is a technology still under development which could result in a different functionality of securities settlement and of the current market players. Therefore, some of the CSDR or SFD definitions could be outdated/inappropriate in the future.

It could, furthermore, be the case that products settled in a DLT are not considered to be securities settled in an SSS, so that they would be out of the scope of the CSDR or the SFD. However, other regulations could prevent (certain) investors (e.g. UCITS, see Article 50 of UCITS 2009/65/EC) from utilising such DLT because they are required to invest in products settled in an SSS, which may cause further problems.

In any case, existing rules should not result in a general prohibition of the new technology or monopolisation of operators without any good reason.

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

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

This contrasts with other jurisdictions proposals which would allow market participants to test certain products with a more relaxed regulatory framework.

Generally we believe that current regulatory frameworks may need rationalising to apply to DLT systems.

In particular, many aspects of the CSDR, if translated to a possible DLT application, are unclear and may require clarifications from ESMA on a number of the following points:

Scenario 1

As CSDR currently stands, the EBF agrees that where transactions are settled on the DLT network and the network is not designated as a securities settlement system, the network would not qualify as a CSD (although, as CSDR is currently drafted, there are difficulties in classifying a DLT network as a CSD in any event since a CSD is defined as "a legal person" – see below).

Scenario 1.1

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To the extent that the settlement of transactions not subject to CSDR takes place on a DLT network, the obligations of CSDR would not be relevant.

Scenario 1.2

A key question here is whether a DLT network would qualify as a settlement internaliser. This is defined in CSDR as "any institution...which executes transfer orders on behalf of clients or on its own account other than through a securities settlement system". In turn, "transfer order" is defined in SFD as "any instruction by a participant to place at the disposal of a recipient an amount of money by means of a book entry on the accounts of a credit institution, a central bank or a settlement agent, or any instruction which results in the assumption or discharge of a payment obligation as defined by the rules of the system, or an instruction by a participant to transfer the title to, or interest in, a security or securities by means of a book entry on a register, or otherwise".

As such there is a question as to whether a DLT network would itself be settlement internaliser, or whether this would be the participants, or whether the settlement internaliser regime would apply at all as currently drafted – which also depends on account structure. In respect of this (and Paragraph 98 of the discussion paper), where a custody bank that acts as a node in the DLT network opens the DLT network account at the CSD, that custody bank is presumably the settlement internaliser. Where all participants open accounts at the CSD, it is not clear how "settlement" would be taking place outside the CSD since transfers would ultimately need to be reflected at the CSD level. This aspect requires further discussion as it appears there may be confusion in respect of settlement internalisation.

Scenario 2

It seems clear that, as currently drafted, a DLT network may struggle to qualify as a CSD as it is not "a legal person" and similarly a DLT network may struggle to meet the necessary CSDR requirements for CSDs.

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

Yes. 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 can be done using blockchain. Depositary business including reporting needs are among the main prototype functionalities. Investor is more likely to early adoption than for issuers.

Nevertheless its potentials would be increased when the further harmonization of the different securities ownership, company and insolvency laws is developed.

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

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 and penalties in the case of infringement of the DLT rules of intellectual property;

Overall we believe that, in most cases, minor regulatory and legal adjustments will be required.

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.

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

Yes, we would expect this could be the case. Some projects are already under PoCs. DLT database design is prepared to register every traded ticket in the market with all its details. The DLT can be used for regulatory reporting purposes, assuming that regulators will maintain or have installed a node for them within the DL. In this case, any settlement activity can be simply “forwarded” to regulators. All settlement-related information would be available to regulators and there would be no need for dedicated feeds with associated reconciliation problems. Regulators would have access to the golden record in real time.

In relation to trade reporting obligations, it should be noted that we focus on settlement-sided aspects only and we cannot comment from a trade repository perspective. However, we can imagine that the DLT could cover or be used for various reporting (including trade-related reporting). Depending on the design and configuration of the DLT and on the information included, reporting in general will be facilitated by the use of the DLT. Reporting obligations can be disposed of as far as the information needed is contained in the DL.

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

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

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

There is also a fundamental question of the eligibility for a DLT network to actually be a reporting infrastructure under the current regulatory framework. The question here is whether a DLT network is a trade repository itself or whether a trade repository would need to be a participant in the system.

This necessitates a review of what constitutes a Trade Repository. Under EMIR ‘trade repository’ means a legal person that centrally collects and maintains the records of derivatives. Under the current text it is difficult to see how a DLT could be a Trade Repository unless incorporated in some way and capable of authorisation as an entity. This being the case, the “person” of the DLT would need some form of jurisdictional nexus. For rules applicable to global/cross border trades where “equivalence” is required, this is particularly important. For instance to satisfy certain EMIR or Dodd-Frank clearing or

reporting obligations, some members must use an authorised or recognised financial market infrastructure (CCP or Trade Repository), and that requires the financial market infrastructure to be subject to the rules of either the home jurisdiction where the rules apply to it directly (i.e. an EU Trade Repository subject to EMIR) or a foreign jurisdiction deemed equivalent (e.g. a US CCP recognised under EMIR). It is difficult to envisage a 'state-less' DLT with no oversight being permitted under a regulatory framework.

DLT as an approved reporting mechanism (ARM) similarly necessitates a review of what constitutes an ARM. MiFID defines an ARM as a person authorised to provide the service of reporting details of transactions to competent authorities or to ESMA on behalf of investment firms. The analysis in respect of potential legal and regulatory issues for Trade Repositories is equally applicable here.

The regulators should assess these possibilities and review the rules in order to verify if the same purposes are obtained with better results by allowing for innovative technology.

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

We understand some start-ups are testing issuer services as bondholder registry, corporate events and issuance registry in primary market.

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

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

We believe most of the possible regulatory obstacles have been correctly identified by ESMA. Although the purposes of the different rules (transparency, reporting, etc) will remain the same, the way these objectives can be fulfilled by market participants should be flexible to allow for innovations. If certain rules are not reconsidered and even redesigned, the full blockchain implementation benefits will be limited.

The analysis of concrete regulatory provisions will depend on the concrete envisaged application of the DLT. As a general rule, we would like to point to different national legal concepts of securities and safekeeping/custody of securities. Different civil laws or legal concepts should not lead to a preference for certain markets or jurisdictions because regulators' view or interpretation of the law is more open and innovation-friendly. International harmonisation of regulation applied to securities markets could be of help.

Regulatory rules which do not necessarily focus on the way securities markets work could also pose obstacles like, for instance, rules on data privacy and data retention. If an obligation to delete certain (digital) data after a certain period of time were to be applied although the data is technically needed, this could pose an impediment to ledgers under the DLT, as the DLT is based upon blocks of transactions stored in a chain and is therefore fully dependent on the complete set of all transaction data in the ledger. An obligation to delete certain data would destroy the concept of the DL. A similar challenge exists regarding the different timeframes of retention rules throughout different jurisdictions. Furthermore, the situation of nodes in the DLT in multiple legal jurisdictions will raise conflict-of-law issues. Even with one contractual law, these may prove hard to manage, particularly when referencing to the SFD.

On the contrary, DLT does not allow, once transactions are validated or information – transferred, to modify or delete data registered on the ledger. In light of the above considerations, we are of the opinion that guidelines on data retention and correction mechanisms should be considered in order to allow the development of this technology.

It should, moreover, be assessed whether CSDs will still be the central position in the new DLT system. In this context and as a more concrete example, Article 3 of the CSDR could be seen as a regulatory impediment to securities traded on a trading venue, as it requires such securities to be recorded in book-entry form in a CSD. Article 18 of the CSDR could also be a potential impediment if a DL is considered to be a designated SSS.

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.

Overall we should be optimistic that a range of new technologies hold the promise of providing more robust security, resilience and information. We cannot afford to assume that the change necessarily equals’ to greater risk.

Much will depend on the technology itself, its scalability, its level of maturity, the controls and environment surrounding it, the standardization and accessibility of transaction data, the quality of management and governance.

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 coexistence with the more traditional processes and technologies. But this should be done in an environment where trust is built and ensure that there is a prudential level playing field between market operators.

It would also be important to stress that any regulatory action would need to primarily focus on the need to ensure a level playing field for all providers of financial services (i.e. 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). At the same time one should be conscious of regulatory uncertainties that may still stifle innovation.