Friday 2 September 2016

EUROPEAN SECURITIES AND MARKETS AUTHORITY (ESMA) DISCUSSION PAPER: THE DISTRIBUTED LEDGER TECHNOLOGY APPLIED TO SECURITIES MARKETS

INTRODUCTION

The World Federation of Exchanges (WFE), the global industry association for financial market infrastructure, appreciates the opportunity to respond to ESMA's Discussion Paper on Distributed Ledger Technology (DLT).

The WFE applauds ESMA's proactive and considered approach to DLT and its thorough examination of the various mechanisms and issues surrounding the technological impact of DLT on the financial sector.

The WFE represents more than 200 financial market infrastructure (FMI) providers including exchanges, CCPs, and CSDs. Our members operate FMIs in both the developed and emerging markets with 36 percent located in the Asia-Pacific region, 42 percent in EMEA and 22 percent in the Americas.

The WFE works with standard setters, policy makers, regulators, and government organisations to promote the development of fair, transparent, stable and efficient markets around the world. Its members operate orderly public markets that promote the safety and resilience of the global financial system. Approximately $26 trillion in trading annually passes through the infrastructures that WFE members safeguard[1].

FMIs within WFE's membership have approached the consideration of DLT broadly in four ways:

1) Seeking to replace existing legacy systems with DLT applications;
2) Offering new products and applications as vendor solutions;
3) Studying DLT to see how to improve the efficiency of existing effective systems;
4) And finally - for those markets, segments or products who do not yet have sophisticated post-trade infrastructure and processes – studying whether it is possible to use DLT to build them in the first place as opposed to converting/migrating existing technologies.

Many FMIs have also set up venture capital funds which invest in promising Financial Technology (FinTech) initiatives and are also participating in various industry groups, specifically the Linux Foundation Hyperledger Project[2] and the Post-Trade Distributed Ledger Group[3].

In July 2016, the WFE, in conjunction with the Affiliate Members Consultative Committee (AMCC) of the International Organisation of Securities Committees (IOSCO), surveyed FMI operators regarding their use of, and perspectives on, DLT - including the Blockchain. The survey questionnaire was developed in collaboration with IOSCO's Committee on Emerging Risk (CER) with the survey results also feeding into broader IOSCO research into FinTech and its application in capital markets.

In providing this response to ESMA, we have drawn upon the repository of empirical data that our work into this area, alongside IOSCO, has generated.

The WFE has recently published the results of this survey and the DLT research project[4] that was undertaken in the autumn of this year and would be happy to discuss both the findings and our response to this Discussion Paper with ESMA at its convenience.

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[1] As at end 2015
[2] www.hyperledger.org
[3] www.ptdlgroup.org
4 WFE Publishes Results of DLT Survey August 2016

EXECUTIVE SUMMARY

- The WFE applauds the considered ESMA approach and the opportunity to provide comment to this Discussion Paper at such a timely juncture. We believe that, while DLT can bring significant benefits to the industry, risks must nevertheless be managed carefully in order to ensure the concept of a trusted, neutral, third party will remain at the heart of well-functioning markets.

- The WFE supports the need for a coordinated European approach to DLT, but also emphasises the need for global consistency based on international guidelines and principles. DLT is innately international, with global applications and uses, and so ESMA should work alongside international regulatory organisations and groupings, such as IOSCO and the G-20, to develop a common approach in order to ensure a level playing field amongst the wide range of current and potential DLT providers and participants.

- Given WFE's membership remains in the initial phase of DLT research and development, it is too early to draw any far-reaching conclusions on precisely which parts of the trading life-cycle DLT will impact and/or revolutionise. That said, at this formative juncture, it is vital that regulators continue to collaborate with the industry in order to better understand the development of DLT so as to minimise unintended consequences from any subsequent policy formation. Regulatory sandboxes have been a useful tool for the wider FinTech industry and so we advocate that these should be extended to DLT in order to ensure that appropriate collaboration and exchange of information occurs between industry (whether regulated, or not) and regulators.

- As the global industry association for exchanges, CCPs and CSDs, the WFE will seek to devote significant time and attention to forging consensus amongst its members on DLT-related issues, specifically formulating guidelines, codes of conducts and industry best practice as use cases and issues emerge.

- Further, the WFE will endeavour to facilitate an open dialogue between regulators and its membership regarding the evolution of the technology and the sharing of information and best practice examples. The WFE also stands ready to provide any further assistance to ESMA if required.

GENERAL REMARKS

The WFE has endeavoured to answer all questions within the Discussion Paper based on its relevance to the WFE membership; however, some questions have not been answered. The fact a question is not answered should not be deemed as a tacit approval with any position outlined within it.

WORLD FEDERATION OF EXCHANGES

WFE RESPONSES TO SPECIFIC ESMA QUESTIONS

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?

The WFE in general agrees with ESMA's list of possible benefits of the DLT. However, we would like to draw attention to the following which we think of key importance:

- **Reporting & Oversight**: The WFE notes that a significant amount of information DLT *could* provide is already available to supervisory authorities in real-time through the establishment of Trade Repositories (TR) and enhanced trade reporting standards. It is felt DLT could certainly consolidate data and make it more accessible for regulators, in particular.

  However, it is important that regulators make commensurate investment in technology themselves to analyse and process the information in a timely way, particularly given the complexity of data concerned, the recent experience of collating data from EMIR Trade Repositories, and an overall lack of resources in this area.

- **Counterparty Risk – Clearing and Settlement**: The WFE agrees with ESMA that DLT is unlikely to eliminate the counterparty risk from derivatives transactions and that, consequently, there remains the need for the risk management role performed by current CCPs, as obligations remain throughout the maturity of the contract. Whilst DLT could potentially offer process efficiencies for central clearing of derivatives in the form of real-time margining, this is unlikely to negate central clearing as a risk mitigant because derivatives will continue to have long-dated maturities which will need to be managed. Furthermore, whilst it is noted that DLT could speed up the settlement of trades to a near real-time basis, there is a risk that this potentially could increase the liquidity requirement in the system to complete the settlement. For example, in many markets, the settlement cycle is T+1 and beyond, and settlement is done on a multi-lateral net basis, offering significant capital and collateral efficiencies to participants. It is as yet unclear the extent to which DLT may offer benefits in this regard.

Further, we note that WFE members are generally in a nascent state of DLT development, due to the highly regulated nature of their core existing business, and are therefore broadly measured in their assessment of opportunities presented by DLT. That said, WFE and AMCC members are exploring a variety of use cases for DLT, which we note below as including:

- Clearing and settlement (also the area of capital markets that WFE members believe DLT will possibly improve the most);
- Trade matching and confirmation (not in traditional exchange-traded areas but rather in relatively lower volume assets such as fixed income, OTC derivatives, the repo market and the private securities market);
- Corporate actions (particularly voting rights, proxy-voting and dividend payments);
- Securities issuance (particularly for private issuances);
- Crowd-funding;
- Trade registration, asset transfer and record keeping;
- Identity management;
- National/International Know Your Client (KYC)/Anti-Money Laundering (AML) registries;
- Trade finance facilities;

- Asset registration facility (such as real estate);
- Database on agricultural receivables; and
- Digital assets and associated products.

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

As detailed above in the WFE's response to Q1.

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

The WFE believes it is too early in the development of DLT to provide a meaningful conclusion here. What can be stated, however, is that asset classes (and sometimes sub-asset classes) in the financial system are markedly different, each with their own processes, maturity and settlement mechanisms.

Furthermore, each stage in the life-cycle of a financial instrument can be highly specialised, often requiring a nuanced approach. It may therefore *not* be appropriate for the use of DLT in each state of the life-cycle for each type of financial instrument.

The WFE's members are assessing DLT applicability on a case-by-case basis to see what, if any, efficiencies can be generated in streamlining individual processes and what role the technology can play in reducing costs. Some members suggest benefits may be forthcoming for firms even on a small scale, for example the replication of transactions on shared ledgers may enable firms to replicate their clearing house data (and reduce reconciliation burdens).

However, DLT use cases remain a competitive issue between FMIs, and as such, each will (may) use it in different parts of the trade cycle - viewing the specific instances as their innovation.

The WFE therefore expects to see DLT used in different parts of the trade cycle in different time zones, asset classes and products depending on the individual market structure of the FMI. However, some of WFE's members have suggested it may take up to 10 years before this occurs.

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.

As highlighted in the answer to Q1, WFE members are investigating various use cases for DLT, primarily for cost savings and use-efficiency purposes. In particular, WFE members think the following are the most likely to be impacted by DLT:

- Cost savings both for FMIs and the industry more broadly;
- Efficiency enhancement; and
- Risk reduction.

The WFE membership sees these benefits as integral to the technology, as it allows for:

- Further automation and streamlining of processes;

- The reduction in the need for authentications and manual reconciliations;
- The reduction in the time needed to finalise transactions; and
- The facilitation of greater data integrity and system resilience.

In relation to clearing and settlement and collateral management, WFE members believe DLT could result in greater capital efficiency for market participants through an overall reduction in operating costs, an increase in clearing and settlement efficiency and a potential reduction in capital requirements (due to a reduction in risk), thereby encouraging greater use of FMIs to manage and reduce risk – consistent with the broader G-20 aspiration for a move toward greater central trading and clearing. Furthermore, WFE's membership views DLT as a source of potential diversification through new products and service offerings.

In summary, the WFE membership's initial conclusion is that activities where there are the greatest opportunities for cost savings and operational efficiencies should be the primary activities impacted from DLT but that, as use cases mature, different implications – and the extent to which they impact the way in which securities markets operate - may become apparent.

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.

As noted in the responses to Questions 1-4 (and particularly Q3) above, given the study of DLT use cases are still in their infancy, the WFE believes there is too much uncertainty to provide a meaningful timeline regarding the point at which DLT will become an embedded application within financial markets.

Certain WFE members estimate the time to market of DLT use cases is between 3 to 5 years (depending on the application), whereas other members consider it will be closer to 10 years. This reflects the differing stages that members are in as regards DLT consideration and development for their specific business. For example, some members are at proof-of-concept stage, while others are still somewhere along the spectrum of evaluation, design and proof-of-technology.

We caution however that any generally stated timeframes noted above should not be read as a blanket endorsement of the viability of DLT for the use cases under investigation. WFE members are still evaluating the extent to which DLT technology will live up to its promise, and have identified concerns about security, scalability, throughput capacity, absence of standards, and the ability to ensure data privacy.

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

N/A – the WFE is an industry association that itself is not currently seeking to develop or use DLT.

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

N/A - the WFE is an industry association that itself is not currently seeking to develop or use DLT.

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.

WFE generally agrees with ESMA on the key challenges and possible shortcomings of DLT. In particular we would note:

- **Technological issues**: Markets should be inclusive. A key determinant of a well-functioning market is liquidity and capacity. Whilst acknowledging certain examples (such as the Bitcoin Blockchain with its millions of users globally), scalability will likely be a significant challenge to the adoption of DLT;

- **Recourse Mechanisms**: A key challenge will be determining an industry-wide solution to correct errors given no application can guarantee a zero failure regime;

- **Governance Framework**: Clarity and consistency around systems accountability and responsibility will be particularly important – for example being clear who is responsible for claims resolution and system misbehaviour; and

- **Privacy Issues**: There are numerous complexities in ensuring data privacy laws are adhered to, given the public nature of the ledgers. In addition, the open nature of DLT gives rise to issues surrounding the confidentiality of data between actors, such as product positions, which will need to be sufficiently protected. Further, it is possible that the identity of the participant could be derived – notwithstanding encryption of the identity of the participant – by analysing the content of the account (which would typically be unencrypted).

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

The WFE supports the need for DLT solutions to be aligned with relevant regulatory and legal frameworks.

In addition, there are several legal and regulatory issues that might need to be addressed or clarified to enable the implementation of the specific use cases FMIs are currently working on. These range from the general – namely data privacy laws, data governance considerations, conflict of laws issues, intellectual property laws, and investor protection laws - to more specific examples. These are set out below:

- Use cases that are being examined include integrated processes across trading, clearing, and settlement. However, the legal and regulatory frameworks often see these in a discrete fashion;

- In collateral management use cases, it is important to have certainty regarding the legal status of digitised assets as a means of transferring and granting security over interests in such assets as well as treatment in insolvency, and applicability of insolvency protection;

- Certain types of DLT implementations do not fall neatly into current regulatory frameworks dealing with settlement finality. For example, in fully decentralised DLT schemes, it is not clear who would define the relevant finality concepts under EU law (i.e. what constitutes a 'transfer order', moment of entry, moment of settlement, law governing the 'system', etc.). An extension of the legal protections provided under the Settlement Finality Directive (which are a precondition for legal certainty of settlement) to DLT schemes would require changes to the existing legal regimes; and

- Smart contracts, which are widely deemed part of the innovation of DLT, still require the need to clarify how errors are identified and resolved, and in what circumstances 'undoing' a smart contract would be permitted.

Some WFE members consider that a lack of legal and regulatory clarity on some of the issues above are among the largest challenges associated with the adoption of DLT in the capital markets.

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 WFE believes it is too early in the development of DLT to suggest meaningful solutions to these challenges. However, it will be important that the development of regulatory and/or legal standards does not prevent innovation.

As previously noted in our introductory comments, the WFE will publish results of its survey and DLT research project in the autumn of this year and would be happy to discuss the findings with ESMA at a later date.

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.

WFE broadly agrees with ESMA's analysis of key risks and would like to highlight in particular:

- **Cyber Risk & Resilience**: Cyber security remains a priority for WFE's membership and is routinely listed as a top 3 priority at the CEO level. Within that context, DLT has the potential to present risk due to the shared nature of the ledger, the risk of contagion, the complexity of DLT protocols and lack of clear oversight and responsibility;

- **Operational Risks**: The WFE shares ESMA's concerns that a glitch or an error in the system could create contagion issues, especially given the complexity of DLT.

- **Data Protection**: DLT will need appropriate data protection and transfer standards (including relating to personal data), which may require adjustment of existing rules.

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

The WFE notes a potential risk in a situation where non-financial players lead the development of DLT solutions, resulting in fewer regulated entities performing core market functions, many of which are subject to established regulatory frameworks. The risk is that a lack of awareness of the regulatory environment, or a lack of formal regulatory oversight whilst DLT solutions are being developed, may result in negative consequences for investor protection and orderly markets. Thus, as DLT use cases gain validation and transition into the securities and derivatives markets, there may be a need for regulators to provide clarification as to how existing regulatory regimes (e.g. EMIR, MiFID2) may apply to certain future financial service offerings which involve DLT solutions.

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

N/A - the WFE is an industry association that itself is not currently seeking to develop or use DLT.

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?

For the purpose of simplicity WFE will answer each of Q14 - Q 22 below.

The WFE considers that all the scenarios listed by ESMA could potentially occur given the nature of DLT is to spark innovation. Consequently, it is certainly possible different FMI operators will explore the scenarios listed.

WFE believes that the scope of existing EU regulations should be sufficient to extend to most potential DLT use cases and that the EU should seek to avoid a multi-layered approach to regulation in this area.

Regulators should be proactive in engaging with industry in order to identify the nature of the DLT application, to understand the technology which underpins it, and to work with industry to ensure the existence of an appropriate regulatory framework, including authorisation regime where applicable. We support the use of regulatory sand boxes (i.e. allowing regulatory applications in FinTech to be examined before they go to market) to be extended specifically to DLT.

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

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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?

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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

Please see WFE response to Q14 above (for the purpose of simplicity WFE has answered Q14 - Q 22 collectively).

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

The WFE and its members are focused on ensuring transparent and orderly public markets; as such, we applaud the willingness of regulators to scrutinise the risks as well as the benefits DLT can bring in order to ensure this. The WFE encourages European regulators to remain focused on ensuring investor protection and the safety of markets whilst at the same time enabling financial technology, which improves capital markets, to advance unimpeded.

However, notwithstanding the proactive nature of regulatory scrutiny from national as well as regional authorities such as ESMA, we advocate that it is highly desirable for a globally harmonised approach in a topic as internationally relevant as DLT. DLT is innately international with global applications and uses and therefore any regulatory principles and/or guidelines should be developed at that global level. As such, we encourage ESMA to work alongside IOSCO and other global authorities including the G-20 to ensure a common approach, thereby ensuring a level playing field amongst the wide range of current and potential DLT participants.

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.

It is important and desirable that regulators respond to the application of DLT – alongside other forms of FinTech - to the financial system. We applaud ESMA's proactive approach to this topic and believe this will be important and helpful in ensuring the market moves together and that investor protection is in focus from the outset. However, we also advocate that FinTech generally, and DLT specifically, should be primarily industry driven, and is not unnecessarily impeded by regulatory intervention. Within that context we would note the following:

- We suggest that ESMA needs to ensure it continues to better understand the technological developments relevant to securities markets – which are fast moving and dynamic - and should look to leverage off initiatives implemented by its members such as regulatory sandboxes. WFE would be happy to facilitate such conversations with FMIs and related entities. Furthermore, due to the global, borderless nature of DLT, ESMA should seek to engage with international regulatory bodies, such as IOSCO, to ensure any policy-formation in this area is complementary and does not encourage regulatory arbitrage.

- We also remind regulators that DLT's innate technology may mean non-financial companies may enter this market, some of whom may not have any experience of regulated environments; as such, any regulatory framework needs to ensure consistency between such firms and traditional regulated entities such as FMI not only to safeguard a level playing field but also to ensure adequate and effective investor protection.

- Given the evolving nature of DLT, it is important that ESMA continuously engages with industry, not only in this key developmental phase, but also beyond. This is in order for ESMA to better understand the technology, what the potential future industry models are - and its subsequent impact on financial markets – as well as how it can most effectively perform its regulatory function.

- Finally, we caution that regulators should also ensure any DLT technical or regulatory standards are consistent with other related rules, for example on cyber security and data protection.