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

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

Responding to this paper

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

*Instructions*

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

* use this form and send your responses in Word format (pdf documents will not be considered except for annexes);
* do not remove the tags of type <ESMA\_ QUESTION\_DLT\_1> - i.e. the response to one question has to be framed by the 2 tags corresponding to the question; and
* if you do not have a response to a question, do not delete it and leave the text “TYPE YOUR TEXT HERE” between the tags.

Responses are most helpful:

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

**Naming protocol**

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

ESMA\_DLT\_NAMEOFCOMPANY\_NAMEOFDOCUMENT.

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

ESMA\_DLT\_XXXX\_REPLYFORM or

ESMA\_DLT\_XXXX\_ANNEX1

***Deadline***

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

All contributions should be submitted online at [www.esma.europa.eu](http://www.esma.europa.eu) under the heading ‘Your input/Consultations’.

***Publication of responses***

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

***Data protection***

Information on data protection can be found at [www.esma.europa.eu](http://www.esma.europa.eu) under the headings ‘Legal notice’ and ‘Data protection’.

# Introduction

Please make your introductory comments below, if any:

<ESMA\_COMMENT\_DLT\_1>

Dear Sir/Madam

Please find attached a response from ISITC Europe (non for profit industry Forum). Th erespobnse is pulled from out DLT workgroup as well as input from individuals from ISITC Europe. As you can appreciate, we have a spectrum of views across individuals as well as companies and as such you will find some disparate views across some of the questions.

As CEO of ISITC Europe, I can offer a call with some of the contributors should you have any questions or clarifications required.

We look forward to any output from your industry canvassing.

Best regards

Nigel D Solkhon

CEO ISITC Europe

Director, Head of E2C Product EMEA, Citi

<ESMA\_COMMENT\_DLT\_1>

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

<ESMA\_QUESTION\_DLT\_1>

The benefits are fair but require wholesale industry take-up to be able to be gained. There is no current obvious solution that would include interoperability with legacy systems. In effect it’s an all-in or not at-all solution. To change the whole industry post trade would require major industry initiatives and probable new legislation and rules or at least massive amendment. The costs of change are not an obvious benefit to investing firms so likely costs would be picked up by the wholesale trading market. Again no obvious business benefit especially as margins are made from existing systems and their inefficiencies (whose owners are required to invest in the new model). DLT offers a unique opportunity to solve many of the existing inefficiencies/challenges, costs and risks but is unlikely to be implemented unilaterally by FS firms. More likely are small industry community projects where there is less disruption but tangible benefits, or within FS firms own architectures . There are no irrelevant benefits that DLT offers just the problems of introducing industry wide change.
The interoperability question is resolved through the use of translation technologies to DLT infrastructures, in a similar way that internal applications connect to industry proprietary and de facto standards across the value chain (i.e. Fix/Iso).

Yes the list of benefits is accurate and secure corporate data distribution could be added. To introduce DLT on an industry wide scale will need legislation/new rules and mass amendments. There are no alternative benefits by using existing systems or established technologies (unless ALL participants use the same application/database). There does not look to be a logical alternative without a new market structure design from the EU that changes roles and introduces new systems and technologies that is mandated for change and investment by FS firms across the whole EU financial markets. There would need to be central control and a post trade Czar to enforce it.

I agree with the benefits except: Point 11. DLT could make it easier to transact across countries. Technology is not the inhibitor to this today, more over regulation market structure created by law and regulation. We already have cross border markets in Europe so I do not subscribe to this point.
\*DLT may allow freer movement within regulation due to the distributed view of a common ledger and use of smart contracts to as a common legal and regulatory usage.
Point 12/20 - I envisage settlement and clearing will still exist although the periods will become hours rather than days. We will still have to have short selling to create liquidity so there will still be potential delays between execution and settlement which will retain the need for clearing.
\*Smart contracts could introduce faster locate services for asset as well as cleaner asset financing based on common data.
Point 14 - Agreed, however development of an existing code would be preferable rather than a further additional code
Point 15 - the benefits of smart contracts are understood, however the risks are less clearly defined. If not carefully administered, loopholes could be exploited like in the cast of The DAO and confidence in the technology impacted.

It's a comprehensive set of headings of all the possible benefits and I can agree that all the benefits mentioned are in theory possible, but it is really still a bit too soon to know how likely it will be to obtain these benefits because there are so many major assumptions that would need to be satisfied which are not to do with technology. And it is true that there are alternative technical ways to obtain some of the benefits listed (e.g. speeding of clearing, unique reference database, availability) but again the bigger issues are not with technology and proving the technology but the requirement to achieve widespread co-ordination in the significant adaption of business processes.

Some of the benefits could be achieved through the use of technology such as Blockchain but it isn't the only game in town. T2S is an example of EU technology designed to deliver similar benefits to Europe. In the UK we have DBV trades which are settled in seconds and turnover is into the hundreds of billions per day.

Yes. Agree with the list of possible benefits.

<ESMA\_QUESTION\_DLT\_1>

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

<ESMA\_QUESTION\_DLT\_2>

Distribution of corporate data to enable all investing firms and investing clients access to corporate data. Also to create better interaction between Issuers and investors. Possible to introduce a new Private Equity market including Peer to Peer lender and crowd funders with Private equity and hedge funds.

New DLT for corporate data distribution and a creation of a new private equity market

A further possibility is to automate securities lending activity by CSDs or custodians using smart contracts.
The technology will make investing in illiquid asset easier. Tokenisation of assets and the use of smart contracts can reduce the length of investment and settlement processes in the loans market, private equity, infrastructure and property spaces.
Another benefit is that the cost of the technology will be far less than existing technology making it easier for new players to enter the post trade space. Possibility for new CSDs and custodians creating the prospect of cheaper services for investors.

No other obvious ones - that's not to say there won't be any though. It is too difficult to predict at the moment - akin to identifying the many benefits of the Internet back in the earely 1990s.

Improving Corporate Actions is an area for consideration. Also if Issuers adopted this type of technology communication to the whole of the investor chain could be far more expedient. OTC Derivative contracts could be an error for consideration delivering contracts to lawyers sellers and buyers far more quickly than today.

Agree with point of potential of secure corporate data. Note, technology is nascent, so not all use cases can be envisioned at this point.

One of the great benefits is the ability to measure events recorded in the DLT and hence, as an industry better manage future similar events.

Greater data distribution to inform processes earlier in the value cycle will make the industry run smarter and more inventively. The use of new assets being securitised will complement preparations for the Capital Markets Union across the EU and support moves towards cross-collateralisation. Old models of place or price arbitrage could give way to latency or even context arbitrage. New FinTech enablers will enter the space much in the manner of MTFs who revolutionised the world of exchange-traded products post-MiFID I, or in the manner of payment agents such as PayPal who achieved similar scale benefits in the payments world. peer-to-peer lending and crowdfunding could be two 'quick -wins'.

<ESMA\_QUESTION\_DLT\_2>

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

<ESMA\_QUESTION\_DLT\_3>

It is more likely that firms would invest in private Blockchains to bring internal benefits of streamlining data and operations within parts of the transaction operational services. Particular industry verticals could be introduced providing there is limited or no cost to investors or where an alternative market structure could be introduced providing choice. Again this would be a cost issue.

No it's unlikely that a industry hybrid would work. More likely private internal Blockchains or industry verticals where investors don’t pay

Benefits are going to fall into two groups. Market wide and internal. Firms will initially develop internal solutions and therefore start realising the benefits of the technology. Firms will then start collaborating on joint solutions, which will further become multi-firm solutions and possibly industry wide benefits. The question should therefore be considered in context of time. Near time the benefits will be limited to the few who have a handle on the technology. Longer term through collaboration industry wide benefits will be realised.

The question is still about the same list of possible benefits and whether they would be affected if we did not have DLT all the way through the lifecycle. I think we could say that applying DLT only post-trade would a) work ok and b) still yield the same type of post-trade benefits. But if there was a DLT tie-up with the issuance and trading parts as well the overall post-trade benefits would be even greater. In practice it would have to be rolled out in phases but having an overall vision early on for the unified end state would be very beneficial.

Private networks (inter firm / inter group) or vertical are likely to be early adopters. I suggest the benefit is likely to be realised only when the whole vertical for that asset adopts a new process. Cost of the new technology (is the current code the one to be deployed) is not yet known, cost of analysis, risk profile as well as deployment is not yet known; and redundancy of exiting IT and or people will need to be considered

Materiality and proportionality needs to be considered when looking at the length and depth of the components of the transaction value chain that are impacted by the adoption of DLT. Adoption across the entire transaction chain is not a pre-requesite (i.e. you don't need every consituent in the transaction chain from 'farm gate to dinner plate' - many benefits can still be realised by optyimising process within the existing value chain. Any benefits will be calibrated by adoption (i.e. low take up will not unlock full economy of scale).

Agree . I see both internal (reconciliation) and external benefits (see Line 14 for use cases), the latter provisional on the correct usage of standards and regional agreements among regulators and central banks. STP benefits will clearly not be realised in terms of greater efficiencies unless solutions are developed end-to-end (e.g. for syndicated loan processing or trade finance stock keeping units).

<ESMA\_QUESTION\_DLT\_3>

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

<ESMA\_QUESTION\_DLT\_4>

We may see DLT changing market infrastructure providing this is enforced by policy. The main changes are to eliminate intermediaries in the transaction chain.

Post trade market infrastructure change will require legislation enforcement and new rules. Other vertical processing are more likely such as corporate data and internal developments in FS firms.

In the securities market the biggest possible impacts will be the disintermediation of parties to the settlement chain. It is clear that self-clearing global custodians could eliminate processes either within their domestic or global custody business. The need for both functions will still exist, however firms will evolve into more cohesive units. The technology will also make it easier for global custody businesses to offer direct services in more local markets, potentially eliminating relationships with domestic market players.
DLT will make it easier to trade and settle illiquid assets therefore we might expect to see increased activity in OTC derivative, loans, private equity space. This in turn will increase pressure on services around the periphery of the post-trade process. like post trade reporting, market infrastructure regulation, CSDR etc.

Presumably we are not talking about the short term here and are thinking about the ultimate impacts in the longer term, assuming all the other things happen to allow DLT to be implemented as fully as possible. In that case I would agree that the most fundamental impacts would be to

Disintermediation is highly likely, perhaps master custodian, global custodian and sub custodian may become one. I am personally unclear how this will work for cash as today custodians hold cash as banker (in the UK under CASS rules) who is operating the cash account in this new world? Will payments be 1:1 or will they be netted, will Central Banks allow this? How can Central or Commercial Bank money be differentiated? I do agree this technology allows settlement cycles to reduce to hours/minutes from days today. My question is, is the market ready for the changes this will force on us?

DLT, does not lend itself to price discovery / exchange applications. Expect DLT to impact mainly in 'post execution' events.
No particular view on specific asset class adoption.
DLT will most likely impact an aspect of the transaction value chain where information can be distributed in a secure manner. i.e. optimisation of work flows by a) mitigating the need for reconciliation and b) providing increased transparency to stakeholders.

See Line 14. The fundamental impacts will centre around greater certainty/assurance of lo-touch processes and automation of compliance (e.g. eKYC) as well as creation of new value streams for securities (and the corresponding communities of interest). Certain domains such as trade finance, my enjoy a significant boost in automation (and corresponding efficiency gains).

<ESMA\_QUESTION\_DLT\_4>

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

<ESMA\_QUESTION\_DLT\_5>

For internal DLT projects we may be looking at the next two year but for industry vertical a little longer unless a community is created to produce an industry vertical solution that works and gains industry wide take up. Data looks like a key element in DLT becoming industrialised. The security and transparancy benefits of DLT offers the chance for streamlining and reducing risks and costs of data distribution. Also regulatory reporting looks like a clear DLT oportunity where it can be mandated by regulators.

Two year plus for any industry DLT projects two year and below for internal projects. Data is a clear activity that could benefit from DLT as regulatory reporting.

Internal DLT projects are already in POC stage therefore are likely in the near term 0-18months. I agree Data is going to be key and it is possible that these initial solutions could be data sharing solutions. Further initial solutions will be internal or bilateral solutions for inefficiencies (ie reconciliation, trade reporting, KYC) and for trading illiquid securities.
Wholesale changes in the wider equity and fixed income markets are over 10 years away if at all as we need to understand and adapt regulation, increase widespread knowledge of the technology, consider legal, scalable, security issues and get agreement across the industry on how to adopt.
While latency introduced by consensus exists, use of the technology to completely replace equity markets is unrealistic due to the demands of HFT.

Most likely in my opinion is that "Industrial strength" DLT systems will be live in 3-5 years, but they will be limited in scope (probably geographically, by asset class and by restricted number of participants), operating in parallel with current market infrastructure and essentially a live PoC for the technology. Unless the regulators can recognise the very different nature of the DLT operating models and adapt the regulations accordingly, there is a danger that most of the benefits will be cancelled out by compliance requirements designed for the current market infrastructures.

We need to see some trials, proof of concepts published and lessons discussed and analyised. As the technology is new and there are very few DLT companies today there could be more demand than supply and the technology is still in its infancy. I think these changes, if adopted would be after 2025, especially when most banks do not have sufficient investment dollars currently to experiement with DLT in a major way.

PoC in 0 to 18 months.
Initial industry adoption (light scale) in 2018.

PoC in 0 to 24 months depending on the use case(s) and complexities. The pace of current regulations will be intensive and tectonic during this period. Production involving small communities of interest by 2020. Full industrialisation 2025 onwards.
Initial industry adoption (light scale) in 2018.

<ESMA\_QUESTION\_DLT\_5>

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

<ESMA\_QUESTION\_DLT\_6>

Creating new business services for investors and eliminating intermediaries to reduce costs and risks for our members as consensus builds.

<ESMA\_QUESTION\_DLT\_6>

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

<ESMA\_QUESTION\_DLT\_7>

Some of our Members are collaborating on Corporate Data distribution and a Private Equity market. Both are needing an industry community to buy into the benefits and a consortium led approach to introduce the service. Regulatory reporting and operating within existing industry reporting standards and ISO20022.

<ESMA\_QUESTION\_DLT\_7>

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

<ESMA\_QUESTION\_DLT\_8>

Yes this is an accurate list. The most important is the legal and regulatory support for DLT. This will be a considerable barrier. This also is the case for Central Bank money. It’s these market infrastructure issues that are mandatory to enable DLT on an industrial scale. More likely is the FS firms will introduce low risk and costs DLT projects in-house. The DLT technology is unique and makes it very difficult to interoperate within an existing architecture both from an internal aspect but certainly from a industry view. The question of interoperability will need to be answered . However industry community DLT projects could be possible providing they are stand alone.

Legal and regulatory environment will need to be created. Interoperability will need to be solved. Central bank money is a big obstacle.

No. The list of challenges is accurate if the objective is wholesale change in the securities market and the need to move to T=instant.
Internal use of DLT would not necessarily be impacted by the same regulatory, scalability, central bank issues.
In fact we already have seen in ItBit solutions where DLT is interoperating with existing payments mechanisms and therefore do not need for the tokenisation of central bank money.
Also to consider is that settlement outside T2S normally occurs in commercial bank money so DLT could be deployed similar to existing technology to account for commercial bank money and then clear against central bank money.
In these cases the full benefits would not be realised, however there would be considerable cost benefits which would be realised that would mean solutions should be developed. It is recognised however the size of the benefits will be greater when central bank money is maintained on DLT and therefore any solutions should be developed so that when central bank money is available on DLT the switch over is easy

My hunch is that the scalability challenge (30) will be solved when the need really arises and also that there may be a solution to the netting challenge (34) without a major change to the core technology. I would tend to agree that the most important challenge is the high level regulatory one (42). The legal challenge (43) will grow with the increased use of and complexity of SMART contracts and could potentially end up being the biggest of all.

I think there are some other issues to consider. Data Leakage if you communicate with a party who is not your client or agent i.e. third party. Will all DLT work together ie inter-operate, are standards agreed? What is the Regulator's view on DLT?

Already described, with more consideration needed for retail plays given the developments around specific plays in the Payments markets, virtual coin etc. One critical need is for standards to support common market practices and interoperability, and such standards should be 'open' (like FIX) and not proprietary. Who would oversee the standards-setting process, and if an ISO-type body (e.g. w3c.org /OASIS), then will standards maintain step with the pace of technological developments?

<ESMA\_QUESTION\_DLT\_8>

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

<ESMA\_QUESTION\_DLT\_9>

In the short term a further issue will be knowledge of the technology. Too few people understand the technology or can develop it. This is going to limit how quick the technology will get adopted

Risks of introducing change will be significant

In the short term a further issue will be knowledge of the technology. Too few people understand the technology or can develop it. This is going to limit how quick the technology will get adopted

I see a big challenge in the actual security administration of the permissioned network. i.e. creating all the Users, roles and rights. This is likely to be extremely complex but also highly critical that it is accurate. Whether it is carried out entirely by a central trusted party, or is somehow at least in part devolved to the partipants themselves, it is going to be a significant activity. Perhaps there is a role here for a government-owned central trusted party or an industry owned one such as SWIFT. But from a technical standpoint I think DLT firms have not really decided yet how to design this vital part, and there is not good understanding of how this relates to the area of digital identity.

Are there sufficient resources to meet the global demand? Legal and Regulatory issues. Contingency plans if the DLT is not available one day? Resilience is unknown. If trades settle that quickly what other issues will it present the industry with, are we ready for them?

Will mebership of a permissioned DLT present a barrier to entry.
No real concern with the adoption and support of the technology as plenty of skills available to fulfil the markets appetite as it evolves.

Several critical concepts that we take for granted will need to be re-imagined, specifically the role of governments/central banks and regulators as trusted third parties, the functions of intermediaries in the transitionary environment (until DLT achieves production, thence industrial scale). Business resilence, data protection and protections against cyber-crime (e.g. DDoS attacks, boiler-room scams, phishing, malware, computer network attacks) need to be thought out, as does the supply of SMEs able to interoperate between the 'hi-touch' world of current operational processing/monitoring/ controls trending to the lo-touch equivalents to come.

<ESMA\_QUESTION\_DLT\_9>

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

<ESMA\_QUESTION\_DLT\_10>

Low cost and low risk DLT solutions will be introduced but mainly internally by FS firms and this will increase knowledge and confidence in DLT and will encourage further investment. Industry wide DLT solutions has an almost utility approach requirement.

Low cost and risk internal application by FS firms along with a industry utility function for some vertical solutions.

Solutions to these problems will come through collaboration. Organisations like R2CEV, Linux Foundation Hyperledger, Post Trade Distributed Ledger Group and ISITC are creating mechanisms for collaboration on how the technology could be developed and used. They are further considering the legal and regulatory aspects and how these should be managed to ensure the potential benefits of the solution can be realised

Industry standards & interoperability are a must. Regulatory guidance is early sought

Clear and transparent membership criteria. Independents represented in governance of new permissioned DLTs.

<ESMA\_QUESTION\_DLT\_10>

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

<ESMA\_QUESTION\_DLT\_11>

The most important risks have to be in security and cyber crime however as we have witnessed SWIFT once considered totally secure is now known not to be. The question is can DLT provide increased security? Security will always be questioned and will always be under threat and it's up to the Industry to introduce continual security solutions. In this respect DLT has many more advantages than the existing systems. Operational automation and eficiences are driven by lowering risks and costs whilst improving control and servicing. It is not acceptable to accept a less efficient system because the least efficient might inadvertantly supply more security . The same argument is with shortening the settlment cycle. In one sense it's reducing risks but in another increasing them. It's about understanding what and where the risks are and managing them. DLT does appear to provide a much better and more secure environment to manage risks.

DLT provides a greater capability to manage risks. Existing market risks would be exchanged for new market risks and it's about understanding them and managing them. The existing market system has already huge risks as we see with SWIFT and DLT would provide in some ways better security although not eliminating the threat of cyber crime.

I agree this is about swapping one risk for another and deciding whether the new risk is better or worse than the previous.

It is another comprehensive list. I think the final para (57) risk about migration and cost of parallel running is not a special risk of DLT. There is a lot of experience in managing and mitigating these types of risks in the industry so I would personally say these less important than some of the other ones mentioned, e.g. malfunctioning Smart Contracts (50).

Agree with Gary's comments, for every problem we fix, 2 more will be created.

Yes, agree with the potential key risks.

The responses here will need to be calibrated to the respondent segment within ISITC-Europe. Consideration of the risks (e.g. market, counterparty credit, operational, liquidity, legal, fiduciary, tax risks) will vary per each Member's business and operating model, and the location of the business entities within each firm (as well as any critical business partners and suppliers).

<ESMA\_QUESTION\_DLT\_11>

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

<ESMA\_QUESTION\_DLT\_12>

Risks of introducing change will be significant

In the short term a further issue will be knowledge of the technology. Too few people understand the technology or can develop it. This is going to limit how quick the technology will get adopted

I see a big challenge in the actual security administration of the permissioned network. i.e. creating all the Users, roles and rights. This is likely to be extremely complex but also highly critical that it is accurate. Whether it is carried out entirely by a central trusted party, or is somehow at least in part devolved to the partipants themselves, it is going to be a significant activity. Perhaps there is a role here for a government-owned central trusted party or an industry owned one such as SWIFT. But from a technical standpoint I think DLT firms have not really decided yet how to design this vital part, and there is not good understanding of how this relates to the area of digital identity.

Are there sufficient resources to meet the global demand? Legal and Regulatory issues. Contingency plans if the DLT is not available one day? Resilience is unknown. If trades settle that quickly what other issues will it present the industry with, are we ready for them?

Will mebership of a permissioned DLT present a barrier to entry.
No real concern with the adoption and support of the technology as plenty of skills available to fulfil the markets appetite as it evolves.

Several critical concepts that we take for granted will need to be re-imagined, specifically the role of governments/central banks and regulators as trusted third parties, the functions of intermediaries in the transitionary environment (until DLT achieves production, thence industrial scale). Business resilence, data protection and protections against cyber-crime (e.g. DDoS attacks, boiler-room scams, phishing, malware, computer network attacks) need to be thought out, as does the supply of SMEs able to interoperate between the 'hi-touch' world of current operational processing/monitoring/ controls trending to the lo-touch equivalents to come.

<ESMA\_QUESTION\_DLT\_12>

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

<ESMA\_QUESTION\_DLT\_13>

Risks of change on an industry scale requires a motivator and a Government lead. DLT can only be introduced on an industry scale if there is Government backing and regulator support. A financial model should be created with DLT as its base technology and areas where it can be introduced identified and areas of legal and regulatory impact clearing the path for implementation. There would need to be collaboration between Government/Regulators/Industry to create the market model. Interoperability would need to be answered and a plan created to phase change. Increase market knowledge of DLT and how it has benefits should be marketed. CREST in the UK showed the scale of change and a model of how to manage industry wide change covering different actors and business areas that come under threat.

Government led change and collaboration between all market actors to create a market model and plan implementation

Again this is a space where collaboration is key. (see question 10).

Taking an individual assessment ot each risk, I think the Cyber risks in 46 and 47 (48 being a knock-on consequence of 47), the operational risks in 49 and 50 and the risks in 55 and 56 can all be mitigated to an extent by the designs of the specific blockchains that will be used. I am not sure about being able to do much about 51, 52 or 53 in advance. Risk 54 can be addressed by focusing on the interoperability issues and standards.

Standards, and collaboration within each Vertical across all impacted parties

Measure and manage the risks and instances the arise in the specific DLT application.

Measure any DLT application against other industry standards / best practices.

Provision of a 'best practice' guidelines in the operation and management of a DLT.

The responses here will need to be calibrated to the respondent segment within ISITC-Europe. Consideration of the risks (e.g. market, counterparty credit, operational, liquidity, legal, fiduciary, tax risks) will vary per each Member's business and operating model, and the location of the business entities within each firm (as well as any critical business partners and suppliers).

<ESMA\_QUESTION\_DLT\_13>

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

<ESMA\_QUESTION\_DLT\_14>

Yes there is a clear benefit in DLT in working within the existing framework. Indeed it offers a cheaper alternative than mass changes within existing systems. However DLT offers bilateral potential for FS firms to settle directly and to fund or use collateral on a bilateral basis. By missing out the CCP the markets could reduce their risks in consolidating. The risks of gross settlement are less than those of netting and DLT provides this mechanism. The issue is to operate two different systems in parallel and there are costs involved as well interoperabilty. Industry wide use of DLT will require some legal changes and some change in regulation but after which benefits will be gaining in beter compliance and greater security and transparancy. New market infrastructures to be set up as an alternative to the existing structure might be possible if the legal framework was created. Data distribution might be an industry wide change that provides benefits in lower risks and costs and not entail major legal or regulatory changes.

Risks could be reduced industry wide with bilateral settlement and reduce the risks of centralisation and c risks with CCPs. Data distribution might have a great industry benefit without incurring legal or regulatory change. Possible set up of alternative market running parallel with the existing market if interoperability problems can be overcome.

It is possible for all of the scenarios to be supported by DLT. Distributed ledgers could be used to track ownership and margin requirements of the CCP.
For bilateral trades subject to margining but not clearing the margining requirements could be created as a smart contract which could automatically call or return margin or at least create notification of a margin requirement.

I was surprised at the emphasis on Derivatives, including Exchange traded in this section as I had understood the scope of the paper was Securities which are covered in Scenario 3. So anyway, I think Bonds and Equities under Scenario 3 will be the first major asset classes - there is more to be gained in terms of benefit there.

Yes but I feel the first proof of concepts will be smaller and potentially improve internal issues before external areas are impacted as the risks are huge and need to be very carefully controlled.

Do not believe DLT, will be embraced at this juncture, for wholesale clearing. Derivatives less likely given the issues around margining. Recording of positions and transfer of title is one dimension, payment in either Central Bank or Commercial Bank money is another. Hence, if DLT is applied, more likely around lower volume transactions with higher operational cost bases (due to lesser economy of scale and higher per unit work flow costs).

Regulators have already expressed interest in DLT being used in a number of contexts, including clearing, settlement, fund services, collateral management, records/registry services, corporate action processing, regulatory reporting and fund transfers. Other use cases for asset servicers could include contract validation/ matching/tracking, account segregation, depository services, digitised payments, tax reclaims, and master data management. Use cases for investment banks and asset managers centre around areas such as automating syndicated loans, smrt contracts (e.g. featuring im/vm terms or best execution criteria), private markets and smart bonds, trade finance, and the processing of tokenized assets for non-liquid markets.

<ESMA\_QUESTION\_DLT\_14>

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

<ESMA\_QUESTION\_DLT\_15>

The need is to not introduce any DLT change before the legal and regulatory environment is created. See CREST as an example

The use of DLT would be as a more efficient replacement of the existing systems as the regulation still requires CCPs to operate the clearing activity. Therefore the compliance obligations do not change with the use of the technology. In implementing DLT the CCP will be required to ensure that it operates in a way that compliance is possible.
In relation non-ccp cleared trades, the development of the technology to support CCPs can be leveraged to create a standard for bilateral clearing and confirmation between counterparties and their clients.

My view is that the regulations should be flexible and proactively changed in advance to facilitate the new model of business that is essential as something that goes hand-in-hand with DLT.

Regulatory requirements won't change so DLT must comply from day one, needs to be viewed as more STP than change

DLT is simply an enabling technology. The regulatory requirements should not be driven by the technology, rather adherance to the principles of fair and orderly markets and investor protection.
Technology is a practitioner matter (see also best practice Q13)

The introduction of DLT as enabling technology has to address the very real issue tht the technology domains (whether Ripple, Ethereum, Bitcoin etc.) must be interoperable, and there are advantages for the entire value cycle to be enabled. The possibility of creating real vs virtualised assets is not something tht central banks will feel comfortable with. I se componens of the value cycle enabled by DLT, not immediate disintermediation of the parties, because I believe that the shorter term advantages will be to create value, not cut costs substantially in the short term.

<ESMA\_QUESTION\_DLT\_15>

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

<ESMA\_QUESTION\_DLT\_16>

There a number of industry verticals that could be introduced. Data distribution /Market data/Reporting /New Private Equity market/Reference data/Tax data/ETC

Scenario 1, 1.1, - These scenarios are only likely in respect of unlisted securities, private equity or funds.
Scenario 1.2, 2 - Trust in the securities is delivered through regulated markets and regulated settlement venues, therefore the role of the CSD might change but they will continue to exist. CSDs may adopt DLT to eliminate inefficiencies in the process. New CSDs capable of meeting the minimum capital requirements, COB and prudential rules may find it cheaper to enter the market and set themselves up initially as investor CSDs using DLT.

The question and scenarios seem to have as their premise that the regulations cannot and will not be changed at all, so it is choosing which ill-fitting round hole to inser this new square-shaped object. I think before deciding which is best I would want to know which aspects of which regulations could potentially be chanegd to accomodate the new busienss models and technology.

I do not believe this is where the deployment will commence as the Vertical is too large, but it could move into these areas if the initial Use Cases are successful

DLT may be applied in one of these scenarios, however, it is more likely that an 'edge case' adoption will be upscaled in scope over time as the community increases in confidence.

Addressing verticals has historically been fraught with difficulty - vertically-integrated exchanges/CCPs/CSDs come to mind over the last few years. I rather suspect that DG Competition in the EU will have more than a passing interest in ensuring that monopolies or single points of failure do not develop. That said, the mid-2020s could see blurring between technology enablers and FMIs.

<ESMA\_QUESTION\_DLT\_16>

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

<ESMA\_QUESTION\_DLT\_17>

The regulator and legal issues should be included in the design. Don’t design than check against the legal and regulatory compliance needs.

It is clear that the issue of settlement finality must be understood before the acceptance of DLT as a means to settle trades as a settlement system or interaliser. Collaboration amongst industry participants and regulators needs to happen to determine at what stage in a DLT process flows settlement finality takes place.

DLT must comply from day one, proper analysis, and business requirments are critical to success.Regulators should be engaged from an early stage prior to design being signed off.

See Q15. Compliance with the existing framework should not be driven by the technology. Regulatory objectives should be technology agnostic.
Clear 'mimimum standards' will assit allowing new technologies to be equivalent or super equivalent.

Critical concepts such as settlement finality, securities lending & rehypothecation, short-selling, novation etc require re-imagining with DLT in mind. Regulatory complince is usually set around the perimeter for permissions, prudential protections, protecting the consumer (and in the UK, competition considerations). These aspects are not normally prescriptive of technologies to be used, but the direction of travel with new regulations (e.g. NISD) might be to address technical regulatory requirements for the Cloud, the Internet of Things etc (in a similar manner to EMD I). PSD II is a good example of what to expect.

<ESMA\_QUESTION\_DLT\_17>

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

<ESMA\_QUESTION\_DLT\_18>

Not safekeeping unless it is mandated by legal and regulatory. Record keeping and reporting yes and this can be both FS internal projects or on an industry scale

DLT will be used for safekeeping and record-keeping purposes. Initially the technology will be deployed internally by securities services firms which operate at a global and local custody level. Solutions will be developed that share information removing the requirement for internal reconciliation between systems.

Yes I expect it to be used in this space if the obstacles can be understood and resolved

Yes. DLT lends itself to recordkeeping.

DLT will be used for record-keeping purposes for sure, and safekeeping if custodians/CSDs can reah agreement (predicated in EU on treatment of liabilities). Certain governments (e.g. Australian Pillar project and France) have indicted their interest is establishing some solid foundations around identity in this area. More need to follow…

<ESMA\_QUESTION\_DLT\_18>

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

<ESMA\_QUESTION\_DLT\_19>

With record keeping there are minimal problems in meeting existing regulatory requirements. In fact it is improved especially with transparency and access. Security will be increased from today's environment although issues not eliminated. Any introduction of DLT should be prior approved by regulators

The issue that needs to be dealt with here is that of territoriality. If DLT is used to keep track of ownership or safe kept assets, where actually are assets store.
We suggest this can resolved through the governance structure that will need to be created around the use of the distributed ledger. While synchronised copies of the ledger could be available anywhere in the world, there will need to be a coordinating entity responsible for granting access to what will need to be a permissioned based network. The location of the coordinating party could be used to determine the appropriate legal jurisdiction which will apply to the network. This suggestion would need to be verified and validated.

Same point as made elsewhere - I am not an expert in the current regulatiosn but I think that to an exten the regulations will have to change to take account of new business models that would almost certainly be needed in conjunction with the DLT introduction.

I do not see regulatory compliance being altered under DLT

See Q15.
Regulators could be provided a 'lens' with which they can directly view the history of transactions on a DLT. This would circumvent the dependance on the provision of timely information for member (or other) firms.

If linked to KYC and digital identity, thought needs to be given as to the roles that governments and tax authorities (e.g. HMRC) will play in setting standards for and distributing LEI data. Considerations such as (the tamper-proof) audit trail, 'track and trace', 'single version of the truth', access to permissioned data records, immutability of those records, data privacy, consents, right to be forgotten - in fact many of the considerations under GDPR - will be relevant here as well. Arrangements will need to tke account of new business models (e.g. digital, robotics, robo-selection, smart contracts) - and also the implications of the Brexit vote. As synchronised ledgr copies could be made available anywhere in the world, there will need to be an approach which is extra-territorial in outlook, with clarity s to who is on-call to do what (e.g. acuracy of underlying data records, transmission of reports etc.)

<ESMA\_QUESTION\_DLT\_19>

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

<ESMA\_QUESTION\_DLT\_20>

Yes it is an obvious use of DLT and would provide some autonomy for regulators to carry out their function more efficiently. Standard electronic reports could be used in the Blockchain and enable more automation and CPU to CPU connection. This is especially useful for Central Banks and International regulatory reporting and Tax reporting.

Yes - DLT enables complete transparancy in the post trade space. Regulators, Central Banks or trade reporting mechanisms will be able to be granted direct access onto the network, providing them realtime access to transactions.

I am assuming the question refers just to transaction reporting ( e.g under EMIR and MifID) and not to ther types of regulatory reporting ( e.g Balance Sheet and PL reporting by a Bank). Answer = Yes. Under a DLT scenario for trading the transactions would not need to be individually reported T+1 by both parties and instead, the act of making the transaction immutable on the blockchain would be the appropriate trigger to separately report a single version of the truth to authorities, populating TRs etc. Regulators directly querying the blockchain is of course possible and should be allowed but some of the Regulator analyses for systemic risks etc. should probably still be done more approriately in a separate environment.

Possibly if Regulators agree to accept it in this medium

Yes. How practitions choose to adopt and implement DLT will be wide and varied.

Yes, I see not impediment to this, provided that enough of the data elements are captured in a consistent way along the value cycle. The immutability of data supplied may be one consideration which may limit the uptake of DLT in the context of negotiated transactions. The exam question is how the industry feels about having competent authorities perched as an actually part of that value cycle (i.e. on the bridge to stop systemic risk transfer from developing?

<ESMA\_QUESTION\_DLT\_20>

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

<ESMA\_QUESTION\_DLT\_21>

The design should be provided by the Regulators and firms would design their system to meet the specification from the Regulators

Collaboration with the relevant regulatory bodies is key in the design of the solution

Surely, given that transaction execution business processes will have to change under a DLT-based scenario, the current transaction reporting requirements within EMIR, Mifid, and SFTR would be amended appropriately to make it easier for a new DLT-based solution to comply.

Regulators would issue their requirments and the firm regulated by them needs to ensure it is complied with fully, even if outsourced to a DLT

See Q15.
If regulators are clear on their requirements, practitioners simply have to comply with published standards and requirements.

Regulators are already clear with the specific data requirement needed to deliver client, trade, transaction, best execution and other forms of reporting/disclosures. The reference data elements and flags required to populate the transaction reports are already generally available within EMIR, MAR, MiFIR, SFTR etc. Some of the definitions of assets (e.g. tokezied components or cash) need tweaks from the tables pubised as of tody. As transaction records feature personal data (.e. name of trader for MiFIR), thought needs to be given to the case when the processing is low-touch and where automated/robotics is used.

<ESMA\_QUESTION\_DLT\_21>

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

<ESMA\_QUESTION\_DLT\_22>

Not trading but for Issuers using smart contracts most certainly. Particularly OTC. As already discussed the distribution of all types of data

DLT could be used for trading of illiquid assets which do not require immediate price discovery. The absence of the need for immediate price discovery means private equity, collective schemes, illiquid bonds, unlisted securities can all be tokenised and then traded and settled on DLT

Yes, potentially in the long term I do not see why other areas including trading could not also be impacted. The performance required for trading is likely to be higher though. The DLT can be considered as a new type of database which can probably better support most transactions executed over the Internet.

Yes, land registry documents, bullion etc

Yes. No list will ever be exhaustive.

DLT could be used for transactions where there is no public price formation process, negotiated transactions, bilaterally-agreed contracts - for lad registry, syndicated loans, loyalty points etc. DLT will assist in the securitisation process and also the fluidity of trading venlocy of these asset types. I do not see DLT replacing established trading FMI structures (e.g. US NMS) in the short term.

<ESMA\_QUESTION\_DLT\_22>

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

<ESMA\_QUESTION\_DLT\_23>

Yes the legal transfer of ownership is different in different jurisdictions and will limit DLT. The regulatory aspect also may vary but we suspect that any introduction of DLT will be attempted within the existing regulations and laws.

Deployment of DLT in the securities markets is possible without regulatory impediment, however this is only possible for internally deployed solutions. Market level, multi-lateral or bi-lateral solutions will need to be consider in context of the appropriate regulation. The creation of any network to trade a security or settle a security will require the functionality to be developed in accordance with domestic law. The technology may require laws to be reconsidered due to the distributed nature of the technology. This will requires firms to collaborate and organisations like ISITC and PTDL to act to bring market participants together.

Yes, based on comments in this paper e.g in paragraph 58 (general case) and the whole premise of scenarios 1.1 and 1.2 as examples of the particular. There should be a preparedness to adapt the existing regulations in light of DLT as relevant, rather than an insistence on compliance with all aspects of existing regulations, because it is envisaged that signifcant changes in business processes would be needed and tehrefore some aspects of the current regulations would not be applicable.

Data leakage is an issue to be considered

Yes. There is a risk the regulators could blur the demarcation between implementing technology and reporting requirements.

The legal transfer of ownership (within security interest vs title transfer; pledged vs rehypothecated and segregated vs omnibus constructs globally) is a consideration. The treatment of tokenised assets needs addressing (are they MiFID instruments, for instance?). The potntial for systemic risk transmission needs to be considered, as does the consequence of cyber-crime and the degree of reconciliation should anyone try to tamper with the records or amend smart contracts.

<ESMA\_QUESTION\_DLT\_23>

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

<ESMA\_QUESTION\_DLT\_24>

Yes they should test DLT against the existing regulations and offer advice to the market to ensure any deployment of DLT is within regulatory accceptance . DLT is very different from the existing distribution of data and transfer of ownership and ebales intermediaries to be eliminated it also allows billateral transactions and transfer of entitlements and all this must be legal with rules introduced to allow growth

It is key that as the technology develops that regulators play a role in that development. What should be avoided is the technology taken a path competely opposed by regulators. At this stage it is important however to monitor not to regulate so to ensure that they are aware as to how the technology could be used but careful not to suppress innovation.

Yes. There should be a preparedness to adapt the existing regulations in light of DLT as relevant, rather than an insistence on compliance with all aspects of existing regulations. This is very much in the interests of the regulators because of the increased transparency benefits of DLT. But as to the how it is much to early to say yet.

I would expect Regulators to be attending such meetings in their jurisdiction and being fully enaged in the debates, issue and resolution forums. But ultimately it is up to Regulated firms to comply with the rules in existence today, the Regulators could adopt that position and remain silent

Yes. Regulators can remain aware of the technologies capabilities, whilst providing guidence on the intent and best practice for compliance around regulations. Work with the industry on the demarcation between technology and regulatory requirement(s).

Regulators and central banks should be mindful of how DLT might interoperate in both the securities/derivatives and payments domains, and undertake to work collaboratively with industry bodies in order to identify the regulations that would require a degreee of modification (e.g. EMIR, CSDR, GDPR, Settlement Finality Directive II, Securities Law Directive II, Financial Collateral Directive II etc.). Regulators may need to work in a concerted i.e. G20-like fashion) rather than compete regionally or nationally to bring this about, and will need to upgrade their systems architectures accordingly.

<ESMA\_QUESTION\_DLT\_24>