



SWIFT Response to ESMA's Discussion Paper on the Distributed Ledger Technology Applied to Securities Markets

2 September, 2016

SWIFT thanks ESMA for the opportunity to respond to the Consultation on the Distributed Ledger Technology Applied to Securities Markets. We are supportive of ESMA's efforts in investigating the potential impact new and innovative technologies may have on existing securities market operations.

SWIFT is a member-owned cooperative that provides the communications platform, products and services to connect more than 11,000 banking organisations, securities institutions and corporate customers in more than 200 countries and territories. SWIFT enables its users to exchange automated, standardised financial information securely and reliably, thereby lowering costs, reducing operational risk and eliminating operational inefficiencies.

SWIFT also brings the financial community together to work collaboratively to shape market practice, define standards and debate issues of mutual interest. We engage regularly with our community to discuss new technology and innovations that could disrupt current business models and create opportunities for new ones.

We are available should ESMA wish to discuss further any part of our response.



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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?

We agree with the list of benefits set out in section 3. The relevance of these benefits may vary – for example, markets that already enjoy fast settlement cycles and high levels of automation will have less to gain from DLT.

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

No, the list of benefits set out in section 3 is comprehensive.

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?

In general, the benefits of DLT would be more limited and the impact less revolutionary if the entire lifecycle of securities were not covered. However, it is also true that from a prioritisation point of view, application of DLT would make more sense in processes that are slow or error prone in particular asset classes. The dilution of potential benefits from not applying DLT end-to-end could be mitigated by ensuring that DLT implementations are interoperable with existing technology through the use of common standards, such as ISO 20022.

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.

SWIFT believes that aspects of the securities lifecycle that are inefficient, or which could benefit from greater transparency, or where there are shared repositories of transactions and positions, are the most likely to benefit from DLT. Markets and asset classes with the most challenges in these areas have the most to gain from DLT.

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.

We expect DLT could start to have an impact within a foreseeable timeframe for the ECB's scenario 1¹, where DLT is introduced to improve the efficiency of existing processes rather than to disrupt them – for instance, in ASX's project to improve equities settlement. A prerequisite for any meaningful deployment of DLT, beyond experiments and proof of concepts, will be the emergence of robust and standardised shared industry platforms. For this, we broadly agree with Morgan-Stanley's [analysis](#) of the adoption of DLT by financial institutions, which anticipates the emergence of shared infrastructure in 2017-2020 and a proliferation of industrial use cases from 2021.

¹ [Distributed ledger technologies in securities post-trading](#), Andrea Pinna and Wiebe Ruttenberg, April 2016

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

As an industry-owned cooperative, SWIFT seeks to serve its shareholders who would benefit from improved efficiencies, reduced cost and improved collateral management. SWIFT itself it has a role to play as a standards setter; a provider of assured digital identity for financial markets players; and as a technology provider.

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.

SWIFT is working on a Proof of Concept (PoC) development for issuance and life-cycle processing of fixed-rate bonds (including coupon payments implemented as a smart contract). Two key attention points for the PoC are:

- 1) to consider what can be re-used from existing industry standards including ISO 20022 in a DLT context, and identify requirements for standardisation of DLT;
- 2) to integrate SWIFT's identity management capability to ensure that actors that interact with the shared ledger are authorised to do so.

The PoC is a working, if simplistic, prototype. We would be happy to share the lessons learned in its creation with ESMA, if this is of interest.

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.

Yes, we agree that the analysis of the potential challenges is valid, with governance issues, in SWIFT's view, being the root concern. Data privacy questions are already being addressed, but this is insufficient without an appropriate governance framework. Equally, effective oversight will require improvements in technology and the development of appropriate governance structures.

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

Yes, the lack of common business standards - describing clearly the meaning of business data, the behaviour of smart contracts and the end-to-end business context in which they operate - is a key inhibitor. Properly governed open standards are necessary to ensure confidence that common DLT platforms are commercially neutral (where this is required), as well as to promote interoperability both between distributed ledgers and between DLT and other industry automation technologies such as financial messaging.

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

Standardisation requires relative stability and maturity in the underlying technology on which standards are to be built. DLT technology is evolving rapidly and we may not have reached that point yet. Nevertheless many organisations, including standards bodies such as ISO and commercial organisations such as R3, are openly discussing the need for DLT standards. SWIFT is conducting its own research in this area and expects to play a leading role in the industry standardisation effort that is required.

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; this is a comprehensive and thought-provoking overview. Some of the risks could be mitigated by careful regulation and oversight, for example the risk identified on fair competition and orderly markets in paragraph 53 could be addressed by regulation that ensures fair and open access for market participants. Similarly, regulation can impose minimum technical and business interoperability standards on licensed operators – as the SEPA legislation and rulebook did for euro payments.

The risk described in paragraph 50 posed by smart contracts is real (for example the 'DAO hack'). This risk can best be mitigated by standardisation of smart contracts and execution environments to ensure that contracts' execution performance is in-line with their legal descriptions and legal norms, and that they are well understood by those that enter into them. Standard ISDA contracts, and standardised schemes based on messaging (again, the SEPA rulebook) are both good models from which the financial community can distil useful lessons for standardisation.

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

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

Please see our answer to question 11.

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?

DLT could apply in any of the scenarios set out in the paper, although it is not yet clear what would be the initial driver would be for switching 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?

Given that in many cases regulation requires assets to be centrally cleared, one scenario is that a CCP (new or existing) would implement DLT as a means to automate elements of the clearing process – e.g. margin calls, or to share transaction statuses with other players to minimise the reconciliation overhead. In this scenario, regulation requiring CCP clearing would continue to be respected, but the required processing efficiency could be improved.

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?

DLT as a mechanism to automate securities clearing and settlement is already in Proof of Concept testing in some jurisdictions (such as ASX, Australia). It is too soon to tell how successful these early implementations will be, but if they *are* successful it is likely that others will follow. In our view, scenario 2, in which the DLT network is designated as a securities settlement system, should not be dismissed.

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

Today's regulation assumes a certain configuration of institution types and automation mechanisms. Depending on the scenario in which DLT is introduced, some assumptions may no longer apply. Examples include regulation of the issuance and ownership of digital assets, and regulation ensuring delivery versus payment. If the industry is to benefit from DLT, regulators will need to be flexible and willing to adapt regulation with a focus on desired outcomes.

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

Yes, the principles of DLT are extremely well-suited to this type of application, particularly in instances where the information – or some important aspects of the information – should be shared and updated by a large population of users. This is the sweet spot for DLT, where its potential for reducing the time and effort that goes into reconciliation is most obvious.

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

DLT will need to evolve to the point that it is demonstrably suitable for the role of record-keeping and ownership from the perspectives of security, data privacy and governance, as required by regulation. DLT compliance with regulatory requirements remains, to a great extent, unexplored and considerable work is still required. Key questions such as who should be regulated, and by whom, are yet to be answered, and indeed the answer is far from straightforward due to the decentralised and cross-border nature of distributed ledgers. Moreover, it is not yet clear whether existing regulation would need to be adapted for distributed ledgers, or whether new regulation will need to be created. Two schools of thought are at play here: either we continue to work within the current regulatory constructs (messaging, roles, process, etc.) or some or all of the aforementioned is disintermediated, obviated or altered. The former option would be much more straightforward in gaining regulatory approval. A recent SWIFT position paper (attach paper) sets out further view on the progress required.

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

We see the immediate application of DLT more as a means of sharing the reported data amongst stakeholders than of replacing the reporting mechanism itself. For example, DLT technology could be used for the ECB hub set up to share data reported under the Regulation on Transparency of Securities Financing Transactions (SFTR) with national competent authorities (NCAs). Similarly, DLT could be used to distribute EMIR data aggregated from trade repositories amongst NCAs. The ISO 20022 standard today specified for reporting offers the flexibility to re-use data element definitions in a DLT context, providing end-to-end consistency for reported and redistributed data.

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

See response to Q19. Also, much reporting under MiFID II/MiFIR, EMIR and (likely) SFTR is specified at RTS level as ISO 20022 messages. As noted elsewhere, SWIFT has been working on the application of ISO 20022 definitions to DLT technology, and we believe it should be feasible to maintain the definitions for data elements used in today's reporting messages through a migration to DLT. This continuity of definitions would greatly facilitate any such migration from the reporting firms' point of view.

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

Yes; there are already prototypes illustrating securities issuance on DLT (e.g. NASDAQ, Symbiont).

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

Some regulation and regulatory technical standards, such as those mentioned in the response to Q21 on reporting, assume a messaging mechanism for reporting data flows. Specifications such as these would first need to be revisited before DLT could be positioned as a mechanism for sharing reported data. For more extreme implementation scenarios, such as the ECB paper's scenario 3, wherein DLT provides a single common platform intermediating buyers, sellers and issuers with immediate settlement, many assumptions about how the market works would be overturned and securities industry regulation would need to be transformed, not least because many of types of institution's roles and processes would change.

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.

Yes, new technology will require regulators to keep up and not impede developments that promise genuine societal benefits. Regulators will continue to be required to ensure the safety of the financial system and it is possible that DLT technology assist in that task. In some cases, regulation may need to be introduced or changed in light of new technological capabilities – for example if settlement of some transactions can be made truly DVP (indivisibility of cash and stock, and instantaneous) using DLT.

Some regulators, such as central banks are also providers of key financial infrastructure and in future may also contribute to the beneficial evolution of DLT in this role, for example by providing DLT-based access to central bank money.

This paper shows that the regulatory community is engaged and open to understanding both the risks and the opportunities presented by DLT. SWIFT is committed to contributing its expertise to the evolution of DLT in the financial industry, bringing to bear its experience as an industry-owned utility, standards setter, and provider of highly available, secure and resilient services.

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